CORPORATE CONTROL, SOCIAL CHOICE AND FINANCIAL CAPITAL ACCUMULATION

A THESIS PRESENTED

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SYNOPSIS

The aim of this thesis is to examine the impact of corporate control on households' choice on consumption-savings and, as a result, on financial capital accumulation. It attempts to provide an alternative to the managerialist and neoclassical 'orthodoxies' in theory (Part I) and subjects the alternative theories to empirical-econometric testing (Part II). The central theme of the thesis runs as follows. The emergence and growth of the joint-stock company has led to the socialization of the 'ownership' of the means of production. The latter has resulted in the generation of a higher level of aggregate saving being available for investment purposes, than could have been the case in its absence. A preference on the part of the corporate 'controlling group' for higher retention and net inflow to the corporate pension funds ratios than that of the non-controlling shareholders and the latters' inability and/or unwillingness to substitute for increases in corporate savings by sufficiently reducing their net personal savings, has facilitated the achievement of this result. Historical consistency and the existing evidence suggests that it is more plausible to interpret the above as the result of capitalist control of today's corporations, rather than managerial and/or all shareholders' control. Increases in corporate saving and less than perfect substitution between corporate and personal saving will tend to reduce the part of private income devoted to consumption: thus containing the seeds of a realization failure. The Saving Function should be extended to allow for these developments: a proposed 'Monopoly Capitalism Saving Function' appears closer to describing saving behaviour today. The post-war U.K. evidence does not contradict the above propositions. Our econometric evidence lends support to our proposed form of the saving function, the idea that different forms of saving substitute imperfectly and the other hypotheses advanced in the thesis.

Στὴ σύζυγό μου

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PART II

A GENERAL OVERVIEW

The emergence and growth of the joint stock company marked a new era in the development of capitalism. The selling of shares to numerous shareholders has resulted in the separation of a part of the ownership from the unity of ownership and control of the large corporations. The further is shareholding diluted, the less is the proportion of ownership left to the original owners. Where ownership and control coexisted there is now partial (if at all) ownership. It can also be argued that, as a result, control has been lost on the part of the original owners.

One of the most important aspects of the growth of the joint stock company is the socialization of the'ownership'of the means of production that it brings about. In the early phases of capitalist development concern has been raised over the co-existence of social production and private appropriation. The new element introduced by the joint stock company is that now 'ownership'[1/] too is social. Has this change altered the nature of capitalism ? To answer that, one needs to define the 'sine qua non' of the capitalist mode of production.

Traditional Marxists identified capitalism with the existence of a 'ruling class' that owns and controls the means of production See e.g. Miliband,(1973). Today, such a (definition of the) ruling class does not exist: by definition. With 33% of all equity capital in the U.S. owned by workers through their pension funds,(see Drucker, 1976), and today's extent of diluted shareholding, talking about a class that owns and controls, can mean any class: or no class. One, however, can entertain the possibility of a ruling class that owns sufficient so as to control the means of production: and achieves with this control through partial only ownership,to privately appropriate the fruits of social

production and social ownership. Such a possibility we entertain in the first Chapter of this thesis.

The socialization of the 'ownership' of the means of production has raised the possibility of a higher proportion of total income being available for expansion purposes than ever before. Is this availability the result of collective consensus, or does it rather reflect hierarchical decisions on the part of a societal group(s) and/or corporations, that are imposed on other groups ? How do these decisions - if any - affect the non-controlling groups' choice over their consumption-savings, and as a result aggregate financial capital accumulation ? In the early phases of capitalist development such were not the issues. With a capitalist class that owns and controls the means of production, decisions over the desired, or needed, level of capital accumulation are primarily the concern of this class. Non-controlling classes are assigned or undertake the tasks of producing and/or facilitating production, but the decisions over how to use their, often meagre, income, is purely their personal 'decision'. With socialized 'ownership' of the means of production, the decisions of whoever is in control, however, have repercussions on other owners too. Obviously, no conflict needs arise if all individuals have and pursue common interests-views over what constitutes the desired level of financial capital accumulation, or if the existing societal institutions are such as to ensure an outcome as close to consensus as it can be. With less than (close to) perfect consensus, however, it becomes crucial to analyze the potentially conflicting aims of different societal groups and examine their impact on financial capital accumulation, and on the economy as a whole.

Unfortunately, orthodox (neoclassical) economists are little concerned with such issues. Based on the implicit or explicit considera-

tion that in modern pluralist societies competition between interest groups will ensure a 'consensus' outcome, they tend to view corporations as an extension of households and the decisions of the corporate 'controlling group' as the result of the agreement between all households. In contrast to this view, another school of thought, the managerialists, have given prominence to issues such as the separation of ownership and control, and the contrasting goals between business policies and the public at large, over retention of profit in the firms, and, as a result, financial capital accumulation. A third school of thought, Marxism, has followed a rather defensive and least constructive strategy. In their attempt to show that a ruling class still exists and controls the means of production, or that managerial control does not alter the essence of capitalism, (i.e. private appropriation and the striving for profits) they did not proceed to examine the issues that the socialization of the 'ownership' of the means of production has raised: thus leaving to managerialists this important task.

The managerialist investigations begin with an assumption: that managers control the firms. This assumption is based on the factual observation that ownership and control are not a unity any more. They then proceed to examine what can arguably be considered as the most important issues of advanced capitalism[2/]: dispersion of ownership, savings and financial capital accumulation being just two. Their findings are then attributed to their assumption: managers' control. This however, is a non sequitur.[3/] An example of that is given by their treatment of the issue of the impact of managerial control on social choice over consumption-savings and financial capital accumulation. Managerialists suggest that managers and stockholders maximize utility functions with different arguments. Managers favour retentions, stockholders favour consumption. Subject to constraints, the formers' control ensures that their decisions are realized: therefore, hierarchical (managerial) control ensures the continuation of capital accumulation. But does hierarchical control imply managerial

control ? What managerialists should have examined, is the sensitivity of their conclusions to alternative assumptions of control structures. If, for example, the same conclusions can be derived from two different assumptions, then it is the realism of the assumptions that matters: which assumptions then become empirical questions. The above possibility is entertained in the second Chapter of this thesis.

In general, the aim of this thesis is to provide a microfoundation for, and an integration of, some issues of long standing interest in economics such as the separation of ownership and control in the theory of the firm, the appropriate form of the saving function, and the possibility that capitalism may fail to realize potential profits due to a lack of effective demand: as well as issues of recent concern, such as the validity of alternative theories of consumption - saving behaviour, and the impact of 'contractual' savings, - corporate retentions and pension funds - on other savings and therefore, financial capital accumulation. Our perspective can best be described as post-Kaleckian.[4/] The thesis is divided in two parts: a theoretical and an empirical-econometric.

In the first Chapter of the first part, an attempt is made to re-appraise the issue of the 'separation of ownership and control' in the theory of the firm. We suggest that despite their effort to analyze the evolution of the modern corporation and its accompanying stock ownership dispersion, managerialists failed to adopt a historically consistent treatment of the control of the firms issue. Historically ownership was separated from the unity of ownership and control, as a result of the dilution of shareholding. Observing the latter, managerialists inferred a separation of ownership from control. Such an inference may be correct or wrong but it does not necessarily follow from the fact of ownership dispersion. In contrast, we suggest, a historically consistent approach

to the control of the firms issue, leads 'naturally' to the conclusion that the assumption of capitalist control - i.e. control by large scale shareholders and big managers - is a much more plausible one, to begin with, that its alternatives. Because historically, the separation of ownership from the unity ownership and control, has been the conscious strategy of those in control - capitalists - to expand their firms and further their interests. To the extent that expansion and control are not mutually exclusive, assuming loss of control on the part of the original owners contrasts with managerialists' own emphasis on individual utility maximization. Assuming that the loss of control was more beneficial to the original owners than the keeping of it, is not self evident and needs to be demonstrated. Assuming finally that control has been lost and to managers is implausible, to say the least: since it disregards the possibility of control having passed to other owners - financial institutions, and, some would argue, workers too !

We conclude, that the direction of causality in the managerialist reasoning, should be reversed: i.e. instead of inferring control from ad-hoc shareholding percentages, we should begin from control, and translate observed shareholding percentages, as sufficient to ensure control for a collusive subset of the shareholders and high level managers, in every specific case. Despite the fact that such a conclusion is a very difficult one to substantiate empirically, all existing evidence is not against it. Further, the implications of the approach appear to be much more powerful in explaining phenomena such as changes in the organizational structure of the firms, and particularly the spread of the M-form organization, which for managerialists we will argue, is nothing short of a puzzle.

Assuming capitalist control[5/], in the second Chapter we attempt to examine the link between such control and households' choice over their

consumption-savings. The neoclassical approach to this question is best described as 'ultrarationality', see David and Scadding,(1974) or households' ability to 'pierce the corporate veil', see Feldstein,(1973). Both these ideas are taken to imply that households take into account corporate decisions and react to them so as to compensate any undesired (on their part) change in business policies. The ultimate result then reflects the collective agreement of all households. The managerialist conclusion that the above is not the case, and that managerial behaviour results in achieving a higher level of aggregate savings available for production purposes, is shared by radical authors too, see e.g. Marglin,(1975): while in the Marxist tradition Baran and Sweezy (1967) have a cursory, but perhaps the only serious, attempt to approach the issue. Unfortunately they go little further than the managerialists, in that they derive their conclusions in terms of managerial utility maximization and 'tax advantages' considerations: issues which, we will argue,are unnecessary and/or of secondary importance.

We suggest that a preference for internal finance on the part of the 'controlling group'of firms, goes at least as far back as in Kalecki's early writings[6], and it is by no means specifically related to'managerial capitalism'.[7] The preference on the part of the non-controlling shareholders for a smaller proportion of retained earnings than the one favoured by the'controlling group',should be looked for in corporate policies' attempts to realize potential profits: by pursuing advertising and other selling promotion activities, which induce a preference for consumption often resulting in the so called 'demonstration effect'. See e.g. Duesenberry, (1967). The 'demonstration effect' fails to explain, however, why small scale shareholders still carry on buying shares. The answer to that we suggest, goes back to Hilferding's (1981) observation that in their attempt to control the highest possible proportion of other people's

money (OPM), the 'controlling group' will generally pay a higher dividend to each share, than the prevailing rate of interest. Despite the fact that the 'demonstration effect' did not render saving through share-holding obsolete, it might have had a depressing impact on it. Coupled with shareholders' dislike for new share issuing, the above might have been one of the reasons for the introduction of what we consider to be the second important stage in the socialization of the 'ownership' of the means of production: corporate pension funds.

Regarding the internal finance policies of the firms, pension fund schemes have two very important characteristics. First, unlike direct shareownership which in an ex-ante sense is voluntary, participation to pension funds schemes tends to be compulsory: i.e. a condition of employment. Second, the possibility that wage earners will compensate for these involuntary savings by decreasing their personal savings and/or borrowing is doubted even by the most prominent neoclassicals. See e.g. Feldstein, (1978). Thus, on the aggregate level pension funds 'savings' help to sustain or increase the aggregate level of financial capital accumulation. Further, the shareownership achieved on behalf of the workers by the use of their money - normally by the financial institutions which control them,(see e.g. Minns, 1981),- help in exposing the naiveté of the managerialist reliance on ad-hoc shareholding percentages. Since wage earners today both in the U.S. and the U.K. 'own' through their pension funds a high proportion of total capital equity, one could argue that they actually control today's giant corporations. Indeed Drucker (1976) has done just that !

A well articulated theme of political economy, is that what is good for the part, may not necessarily be good for the whole too. Do the internal finance policies of the corporations have a beneficial impact for

the economy as a whole ? We examine this issue in the third Chapter of this thesis. It is suggested that the retention and pension funds policies of the corporate sector's 'controlling group' may result in an increasingly lower proportion of private income going for consumption purposes: that is, a fall in effective demand, ceteris paribus. Under conditions of excess capacity, characteristic of most advanced capitalist countries today, this may have a depressing impact on the profit rate, the rate of capacity utilization, and the realization prospects of the corporations: as a consequence, on investment, and via a vicious circle of contraction, on the economy as a whole. The post-war U.K. experience is found not to contradict the above scenario.

Suggesting the anarchy of the capitalist mode of production as the explanation for the above result may be insufficient: at least in this case. What explains the continuation of corporate policies on pension funds in the presence of prolonged recession ? We consider the possibility that 'imperialism' rather than 'irrationality' may be the explanation. That is to say the potential existence of profitable outlets abroad for the finance of which savings are obtained via retention and pension funds policies at home. In this view imperialism becomes the cause of underconsumptionist tendencies within the home economy, rather than the other way around. Our version of under-consumptionism is compared with Baran and Sweezy's (1967) version. In particular it is stressed that in our case underconsumption does not require increasing profit margins - the 'surplus ' in Baran and Sweezy terminology. It can arise with a constant or even falling surplus, provided that the ratio of corporate saving to private income, rises sufficiently. We conclude that corporate retention and pension funds policies may constitute part of the explanation of the recent recession.

The socialization of the 'ownership' of the means of production and corporate retentions policies, has revived interest in what constitutes the most appropriate form of the saving function under conditions of advanced capitalism: unquestionably one of the most thoroughly ploughed issues in economics. This, we attempt to examine in the fourth Chapter. Surprisingly, with the exception of neoclassical writers, theory and evidence on this issue have been kept well apart. What is most notable, however, is that in recent years an amazing and never recognized convergence has been achieved between four schools of thought, over the appropriate form of the saving function. The so called 'Managerialist Saving Function', which posits differential propensities to save between households on the one hand and corporations on the other, appears, with slight variations, to be consistent with neo-post Keynesians, managerialists and authors in the radical tradition.

We suggest that the 'Managerialist Saving Function' (MSF) and in particular its focus on households and corporations, is not necessarily a bad working hypothesis. It does not however, imply managerialism: since it is at least equally consistent with capitalist control as with managerial control. Further, in its present form the MSF is confined to only the first stage in the socialization of the 'ownership' of the means of production and needs to be extended towards the incorporation of the second stage: the Pension Funds Revolution. The result of our reformulation is an extended MSF which suggests that the corporations' 'controlling group' save for workers via pension funds, and for shareholders via retentions. Retentions and pension funds constitute total corporate savings. Households (workers and small shareholders) do not save out of their remaining income, but only for transaction purposes and disequilibrium reasons such as the increase in their incomes. Thus, the propensity to save household income is zero, and in equilibrium savings

are only corporate savings. This is not to suggest that the proportion of savings out of profit income earners and wage earners is the same: since pension funds can be imputed to wage income and corporate retentions to profit income. The result of this imputation will give us the aggregate proportion of income saved by profit income and wage income earners respectively. The extent however to which obtained percentages can be considered as propensities is doubted. Emphasis on propensities is misleading, since actual propensities are hypothesized to be zero. The obtained percentages simply reflect corporate savings on behalf of households and disequilibrium savings on the part of each group. We further suggest that the extended MSF can best be described as the Monopoly Capitalism Saving Function (MCSF): since it reflects the result of the socialization of the 'ownership' of the means of production, associated with the monopolistic stage of advanced capitalism.

The second part of the thesis is concerned with testing empirically the hypotheses advanced in the first part: in particular we test the substitution hypothesis of savings, that is, the idea that households can 'pierce the corporate veil', for the case of corporate retentions and pension funds on the one hand, and other savings on the other. We will see that these tests constitute at the same time tests of the MSF, the Neo-classical Saving Function (NSF), and the MCSF, as well as other versions of the saving function, proposed in the literature. We also test the idea of zero propensities to save on the part of the household sector as a whole - small shareholders and workers alike - or what we call the Galbraith-Marglin hypothesis.

Empirical work on these issues goes as far back as in the work of Kalecki in the 1930's. It can be broadly divided into two categories. Empirical tests of the idea of differential propensities out of different

types of income: and tests of the substitution hypothesis of savings, for retentions and pension funds. There has been a revival of interest in the first category in recent years, while the second is now the focus of substantial and growing interest. The principal problem of the existing empirical work in the first category, is that it focuses on testing for differential propensities out of personal sector income shares only, that is, it disregards corporate retentions. This contrasts Kalecki's original treatment, and also it is inconsistent with the Kaldorian reformulation of Kalecki's proposition, which is often claimed to be tested. Further, the focus on income saved out of personal sector shares only will tend to impose equal 'propensities' to save profit and wage income, in the case profit income earners save part of their total income in the form of retentions. In the second category empirical work is undertaken in a rather ad-hoc manner, with little emphasis being paid to the consistency of the data used, with the hypotheses under examination. Most notable is that in their concern to test the substitution hypothesis of saving, or the effects of retentions and/or pension funds on capital formation, authors in this category rarely seem to realize that their results have implications for the issue of differential propensities too.[8/] It hardly needs saying that no attempt at integration has been made so far; which is, the testing of the hypotheses involved in a common data framework and with the theoretically consistent definition and use of the data in every specific case: the attempt undertaken in this thesis.

In the fifth Chapter, we test the MSF versus the NSF, or alternatively, the impact of corporate retentions on other (personal) savings, and aggregate capital formation. In the sixth Chapter, we test the extended MSF versus the original MSF and versus the NSF, or alternatively, the effects of pension funds and corporate retentions (contractual or corporate savings) on other personal discretionary savings, and aggregate financial capital formation. We also test the Galbraith-Marglin hypothesis. In the seventh

Chapter we test for differential propensities out of profit and wage income shares, in three stages. First, as implied by the extended MSF or the MCSF. Second, as implied by the traditional focus on personal sector shares only, and third, as implied by the original Kaldorian form: i.e. after having imputed pension funds to wage income and corporate retentions to profit income. Needless to say, that in doing so, all our previous hypotheses are tested simultaneously, in a common framework.

An important consideration at that stage of our research was the existence of a host of consumption-saving hypotheses-estimated forms, proposed to explain consumption-saving behaviour. Focusing on the one or the other may be subject to criticism for lack of generality, to say the least. To account for that in the fifth Chapter we estimate a Simple Linear (SL) model, a Distributed Lag (DL) model, the Life Cycle Hypothesis (LCH) and the Houthakker-Taylor (H-T) model.[9/] The LCH and the H-T models are found to lead to the same estimated form with no further assumptions, and therefore investigation in the sixth and seventh Chapters focuses on the first three models. With simple assumptions all three models are shown to lead to a general estimated form in which they can be nested as special cases. This we also do and then test down to obtain the equation that best explains our data generation process.

A brief summary of the results is as follows. The extended MSF (or the MCSF) is supported by the data against the original MSF which in turn is supported against the NSF. The original Kaldorian saving function is shown to obtain from imposing invalid restrictions to the MCSF. Little support is found for the substitution hypothesis of savings. Instead, corporate retentions and pension funds are found to nearly add-on, on a one to one basis on other savings. Support is found for the Galbraith-Marglin hypothesis. Together the last two observations imply that an increase

in contractual (corporate) savings of £1; will increase financial capital accumulation by nearly as much. The proportion of profit income saved is found to be of the order of 70%. Wage income is saved in a much lower proportion: around 30%. This is in line with the Kaleckian and neo-Keynesian theorising. It is, however, worth stressing once more that such savings do not reflect any psychological 'propensities' of the consumers [10], but rather disequilibrium personal savings and households' contractual saving through corporate retentions and pension funds.

A major finding of this part of the thesis is the verification of the idea that the majority of households do not derive their consumption-saving plans in terms of their aggregate (disposable and contractual) income, but rather in terms of their disposable income and their realizable claims on their contractual income. This would suggest that the household sector consumption-saving function should be specified in terms of household disposable income only, and then be appropriately augmented to account for contractual (corporate) income and the potential substitution between the latter and the former.

Along these lines, a 'generalized' saving function is derived for the household sector, consistent in its estimated form, with most consumption-saving hypotheses proposed to date. In its framework we then test again all the hypotheses advanced and tested in the thesis, and find largely the same results.

The above treatment leaves explicitly the specification of corporate saving unexplained. Since the latter can be viewed as being determined by a set of explanatory and predetermined variables, the thus resulting corporate saving function along with the personal saving function gives

rise to a recursive system that can be estimated with Ordinary Least Squares without the problem of simultaneous equation bias. Further, it is suggested, the private saving function may be viewed as an incomplete attempt to aggregate the personal and corporate savings functions. This explains the similarity of the findings, but highlights the need to separately account for the determination of corporate saving.

The above concludes the eighth Chapter of this thesis. This is followed by a concluding Chapter, which briefly surveys our main suggestions-findings and examines potential limitations at the analysis-methods used, as well as potential future extensions.

NOTES

1/ We use the term 'ownership' throughout to denote the fact that the purchase of a share does not imply real ownership of the physical capital of the firm, but rather an entitlement to the owners of a share to a part of any potential 'surplus' generated in the firm from putting its assets to work. See e.g. Thomson, (1977).

2/ See Aaronovitch and Sawyer (1975) for a similar view.

3/ A similar argument is advanced by Wood (1975).

4/ For the 'differentiae specificae' of the post Kaleckian perspective from the Keynesian-monetarist orthodoxy, the interested reader may refer to Sawyer (1982a, 1983).

5/ A substantial body of the existing literature on these issues is based on the explicit or implicit assumption that managers and/or all owners control the firms. We could just as well assume capitalist control and pursue our analysis accordingly. In this light our attempt in the first Chapter, simply reflects the fact that we consider the issue of control valuable on its own right, and also our belief that the choice of the assumptions does matter and needs justifying: especially since it is possible that different assumptions may lead to similar, or the same, implications.

6/ Robinson (1980) traces the preference for internal finance idea back to Marshall. 'In Marshall's world ... successful firms retain part of their profits to invest in expanding their activities, and the more capital they own the easier it is to borrow outside finance'. (p.12).

7/ An observation stressed by Lambrinides (1972).

8/ See also Cowling (1982) and Sawyer (1982).

9/ Throughout, familiarity will be assumed for these and the other theories of consumption-saving, on the part of the reader. Ferber (1973) and more recently Wallis (1979) have interesting surveys.

10/ This we think, casts grave doubt on the Keynesian idea of the 'fundamental psychological law ... that men are disposed ... to increase their consumption as their income increases, but not by as much as the increase of their income', (Keynes, 1973, p. 96); which effectively assumes that 'men' do have control over their own money.

PART I

CORPORATE CONTROL, SOCIAL CHOICE AND FINANCIAL CAPITAL ACCUMULATION : THEORY

CHAPTER 1

The Separation of Ownership and Control in the Theory of the Firm : A Reappraisal*

* This Chapter relies on, and extends, ideas that first appeared in Pitelis and Sugden (1983). Earlier versions of this paper were presented at: an Industrial Economics Workshop at Warwick, a Staff Seminar at the International Institute of Management, Berlin, and at the SSRC Summer Workshop on Work Organization (Warwick, July, 1983).

INTRODUCTION

Existing managerial literature on the separation of ownership and control in the theory of the firm has followed a static and historically inconsistent treatment of the control issue. It tends to view modern firms as different, both quantitatively and qualitatively, from their predecessors. Whereas the latter are seen as under the control of their owners, the large corporations of today are classified as either owner or manager controlled. This classification is based upon an ex post analysis of share ownership : if no cohesive group of shareholders - i.e. owners - is found to possess more than a fixed percentage of shares, the conclusion is that owners do not have control, which is assumed to pass to managers.

In contrast, the aim of this Chapter is to argue for a historically consistent approach to the issue of control in the theory of the firm.

Section 1, has a brief historical overview of the ownership versus control debate. Section 2 explores the theoretical framework, attempting to establish an alternative perspective on the control problem, and presenting a diagrammatic exposition of the argument. Beginning from the position where an owner has control and recognizing that control is inherently beneficial, it is argued that owners will assess the percentage of shares others can obtain before control is lost. That is, it is suggested that causality in reality runs from control to share distribution. In general, the observed distribution of shares will suffice to give a subset of owners - "capitalists" - control.

The view taken is that this approach is more plausible than alternatives, and as such the burden of empirical proof must lie with those

favouring these alternatives.[1/] Section 3 considers the existing evidence, both direct and indirect. The hypothesis that capitalists control firms performs at least as well as its alternatives.

1. HISTORICAL OVERVIEW

The 'separation of ownership from control' and its entailed 'managerial revolution' has a long history. Its fatherhood has been attributed to Marx (see Aaronovitch, 1961, Miliband, 1973, and De Vroey, 1974). Marx's central argument was that the development of the joint stock company tends to separate the management function from the ownership of capital. The non-owner manager, Marx (1959) suggests, 'performs the real functions pertaining to the functioning capitalist as such, only the functionary remains and the capitalist disappears as superfluous from the production process" (Vol.III, p.388, emphasis added). As already observed, the above does not imply that the capitalist disappears from the society too, (see Aaronovitch, 1961), something that becomes clear when Marx describes the process of the socialization of the 'ownership' of the means of production as 'the abolition of capital as private property within the framework of capitalist production itself' (ibid., p. 436).

Perhaps the most important development on this issue along Marxist lines is by Hilferding (1981). In his 'Finance Capital', first published in 1910, Hilferding focused on the impact of stock dispersion in joint stock companies, on what is in modern usage termed control of 'other people's money', (OPM). The distinctive feature in Hilferding's approach is that he views the process of the socialization of the 'ownership' of the means of production explicitly as a conscious strategy on the part of the controlling capitalists, to pursue their interests. He

talks in terms of the emergence of a 'distinctive financial technique the aim of which is to ensure control over the largest possible amount of outside capital with the smallest possible amount of one's own capital' (Hilferding, 1981, p. 119), and suggests that the 'capitalists form an association in the direction of which most of them have no say. The real control of capital rests with people who have actually contributed only a part of it' (ibid., p. 127).

There appears to be no sign of 'managerial revolution' in Marx and Hilferding, although both recognized the possibility that the separation of the ownership of capital from the unity ownership and control of capital, might lead to a different attitude on the part of the 'new' capitalists (partial owners-controllers) than the one of the 'old' capitalists (full owners-controllers):[2] an issue taken up later and further elaborated by managerialists.

The idea that the socialization of the 'ownership' of the means of production will also result in the managerial control of the means of production, has been advanced most forcefully by Berle and Means (1967), in a book originally published in 1932. On the theoretical level the Berle and Means argument was no more than an assumption: based on the factual observation of widely dispersed shareholding. What, however, was more important in their work, is the fact that under assumptions on shareholding percentages necessary for alternative control structures, Berle and Means concluded that in 1929, 65 per cent of the 200 largest U.S. non-financial corporations, or 80 per cent of their total assets, were controlled by management. Based on their findings, Burnham (1962) elevated the idea of managerial control to a theory of 'social transition ... from the type of society which we have called capitalist or bourgeois to a type of society which we shall call managerial' (p. 73), in a book first

published in 1942. The most important elements in Burnham's ideas are that: managers are a 'new class' which controls without ownership but via its control of the state mechanism that itself (will) own(s) and control(s) the means of production and that this managerial revolution was common to capitalist U.S.A., communist U.S.S.R. and fascist Germany.

Despite the fact that Burnham's ideas appear to be little more than the logical extension of the Berle and Means arguments, the two studies received totally different reception and met with different success. Burnham's influence has been minimal - if any: partly because of his unsuccessful prophecies (see Sweezy, 1953) and the concerted criticism of his book (see e.g. Gerth and Mills, 1952, and Sweezy, 1953), as soon as it appeared. In contrast the widespread acceptance of the Berle and Means thesis resulted in what one can characterize as a 'neo-orthodoxy' in modern economics.

The immediate manifestation of the Berle and Means thesis' impact followed from the idea that managers control. If this is accepted, it is also possible to suggest that managerial behaviour differs from owners' behaviour and similarly the aims of managerial corporations differ from those of the corporations controlled by the owners. This possibility was explicitly recognized by Berle and Means, and it was further elaborated in the work of Gordon (1952). Emphasis along these lines was given to the question of whether managers will be interested in maximizing profits, or pursue different aims. Both Berle and Means and Gordon considered it a distinct possibility that the latter may be the case.[3/] The natural extension of that was an outflow of 'managerial theories' of the firm that attributed to corporate managers and today's corporations motives different than the maximization of profits: prominent among them are Baumol (1959), Williamson (1970), and Marris (1963,1967). All are based on the explicit

assumption that managers control the firms.

On the empirical level, neoclassicals never disputed the 'simple facts |that| only a handful of the largest American corporations can be said to be managed by a coherent group with a major ownership interest. ... What is in dispute is their implications' (Solow, 1967, p. 103). Regarding, in particular, profit maximization, the capital market discipline will ensure that managers will never significantly diverge from the profit maximization aim. If they do, the stock market will put a low valuation to the firm's assets that may tempt another management to take the firms over: 'a definite threat to the autonomy of the management taken over' (Solow, 1967, p. 107).

The profit versus growth of sales maximization debate has given rise to a host of empirical work that attempted to distinguish between the two. See e.g. Herman (1979) for a recent survey. This, however, has proved to be a rather unsuccessful task. As Sawyer (1979) observes 'the ways of comparing these theories ... do not enable any basic distinction to be made between growth of sales and growth of profits' (p. 154). Solow (1967) shares this view too. The main reason for that is that alternative control structures may result in similar or the same behavioural implications and there are no compelling reasons for example, to suggest that managers will tend to disregard profit maximization. See e.g. Cowling (1982). Similar considerations, moreover, apply for the so-called unprofitability of mergers and the idea that observed high retention ratios are only consistent with managerial control.[4/] For these reasons we give no further consideration to these issues in this Chapter.

The idea that managerialism, even if accepted, has no implications for the normal functioning of the capitalist system, is shared by authors

in the Marxist tradition too. See e.g. Baran and Sweezy,(1967). Others have attempted to show that profit maximization is in fact a necessary prerequisite for the achievement of other objectives. See e.g. Cowling (1982). A significant part of theoretical and empirical work, however, has also been devoted to the questioning of the very idea that managers do control. Important contributions along these lines are, among others, Mills (1959), Aaronovitch (1961) and Miliband (1973). Part of the empirical work along these lines is examined in Section 3 of this Chapter, in the light of our analysis. Our argument is that the attempts to challenge fundamentally the managerialist perspective are few and incomplete: and this is our aim in this Chapter.

Two issues are worth stressing. Throughout this Chapter we refer to capitalist control, today and yesterday. This does not imply that the same capitalists (i.e. the heirs of a founder tycoon) are still in control of their corporations: which would be naive and a far cry from the existing evidence. See e.g. Herman,(1979). It rather implies control by a capitalist class that comprises individuals (large scale shareholders and big managers) or institutions, in particular financial institutions, that are themselves controlled by large scale shareholders and big managers. This class is defined as one that owns sufficient so as to control the means of production.[5/] Alternatively, the argument is that, the dynamics of the system are such that managers or even workers can obtain control by acquiring shares, in which case they become capitalists, while failed capitalists can become managers or even workers. See e.g. Marx, (1959) for examples along these lines. For the purposes of the managers versus capitalists debate the essence of the above is the same: i.e. capitalist control.

The second issue refers to the treatment of the financial

institutions. In recent years the shareownership on the part of such institutions has increased dramatically. See e.g. Minns,(1982). In the light of that, concern has been raised over the type of control such institutions are seeking. See in particular Minns,(1981) for a summary of the arguments. Such concern is perfectly legitimate and it would be least surprising if financial institutions are pursuing different interests than the ones of corporations, (i.e. industrial capitalists). These, however, are intercapitalist differences: i.e. they do not bear directly on the managers versus capitalists issue. For the purposes of the rest of this Chapter, the analysis of control followed applies equally to industrial corporations and financial institutions. In contrast, the managerialist argument to this point would be that managers have taken over the financial institutions too, say because the ultimate beneficiaries of the money-shares that these institutions control (e.g. pensioners etc.) are numerous and have no say whatever for the running of such institutions. Although this latter argument is a perfectly legitimate one, it does not imply managerial control: simply, because the control of OPM is the historic function of the financial institutions and by no means associated only with the era of 'managerial capitalism'. With the above in mind we can proceed to examine the meaning of control, in the next Section.

2. CONTROL OF THE FIRM: A THEORETICAL FRAMEWORK

2.1 What Does Control Mean ?

To avoid semantic misunderstandings, it is initially essential to consider the question: what does control mean ?[6/]

Throughout this Chapter control implies the ability to determine broad corporate objectives, despite resistance from others. By broad

corporate objectives, we refer to decisions taken over strategic issues, such as "the rules of the game" (i.e. a firm's relationship with rivals), the national or international orientation of the firm, and its relationship with the state, foreign governments, workers (and other non-controlling groups in the firm), sources of raw materials, etc. See Zeitlin, (1974). Control does not imply the making of day-to-day decisions over tactical issues, such as promotional activities, the choice of particular projects from a set of alternatives, etc. Whereas these issues are significant for the short run smooth functioning of the firm, it is our assumption that, subject to rare exceptions,[7/] it is the long run strategic decisions which determine the success or failure of the firm.

Although the remainder of this Chapter simply refers to control, it should be noted that such control can in fact be "actual" or "potential". Thus, from the time a strategic decision is taken, the problem of the best way of implementing it arises. This is not necessarily the concern of those taking the decision; it may be left to others specifically employed and/or trained for such a purpose. These individuals may be left with discretion as to the exact means of implementation, but this only implies control if two conditions are met:

(i) the exercise of discretion replaces the strategic decision with another, and

(ii) it succeeds in implementing this decision despite resistance from the original decision takers.

This would essentially be a transfer of control, a possibility analysed later in this Chapter.

If neither (i) nor (ii) is satisfied, control is with the

original decision takers. However, if condition (i) is satisfied but (ii) is not, the situation is one of actual control; i.e. a strategic decision is altered but resistance from the original decision takers results in the original decision being implemented. Moreover, it is also possible that these day-to-day decision takers challenging the strategic decision will be punished, for example sacked, or not promoted.

However, in practice prospective challengers to a strategic decision can often be expected to realise the futility of a challenge, or to appreciate that a challenge would merely lead to their punishment. Therefore, they will not attempt to change a strategic decision. That is, control is more likely to be potential rather than actual, albeit this is equally as real.[8/] See also Zeitlin,(1974), Scott and Hughes (1976), Nyman and Silberston (1978), and Herman,(1979).

Finally as regards definitions, note that throughout this Chapter control exercised via a holding of shares is defined as owner control, whether or not those owners also play a role in the day-to-day decision making of a firm. In particular, we make no attempt to analyse the consequences of control exercised by those who also make day-to-day decisions as against control exercised by those who do not make such decisions.[9/]

2.2 An Analytical Framework

Consider now the following situation. Firm F - a typical firm in nineteenth century capitalism - is a small enterprise owned entirely by individual(s) C - where C represents "capitalist(s)". Workers are employed to perform certain tasks, but C is in total control of the firm. Thus, firm F is indisputably an owner controlled firm.

Suppose now that the firm expands. Will control be lost by C ? If so, to whom ? The answer to these questions can be sought in an exploration of the two critical needs of an expansion, namely:

(i) finance - e.g. a new factory must be paid for - and

(ii) managers - to administrate the now more complex and bulky firm organization.[10/]

The prevailing view amongst economists appears to be that C does lose control, and to management. See, for example, Marris and Mueller, (1980), for a survey. This is based upon the observation that finance is obtained by the issue of shares in the firm to (often) numerous shareholders. The latter 'own' the firm, possessing the right to hire and fire management, and receiving a dividend on each share. However, because there are (often) so many shareholders, it is argued that, save in exceptional circumstances,[11/] the power to hire and fire is to all intents and purposes non-existent. Managers therefore have discretion in following their own objectives. See also Scott (1979).

This managerial approach is deficient on at least three closely related counts:

(i) it is unclear where the notion that exceptional circumstances results in owners' intervention fits within the overall concept of control; or what exactly does this power of intervention entail.

(ii) even if it is accepted that owners lose control, managerialists only assume that managers have control, see Zeitlin (1974). But why not workers, for example ?

(iii) in their largely static and historically inconsistent

analysis, managerialists have never adequately explained why the original owner(s) should be expected to lose control to managers. Put another way, the critical issue is: given that C initially controls the firm, why should C, in choosing that the firm expands, choose to give away control ?

(iii) is the fundamental issue that will now be addressed.

The first point to note follows from the definition of control. The ability to determine broad corporate objectives despite resistance from others implies something inherently beneficial in possessing control.[12/] That is, whoever possesses control can make the firm follow a strategy that best suits his (or their) interests, rather than one preferred by others. The essence of the issue is consequently distributional,[13/] namely: who is to benefit and who lose as a consequence of the alternative strategies for deploying the often vast resources available to a firm ? Moreover, it should also be recognised that control may be desired in its own right, not simply because it enables its possessor to pursue other desirable ends, but because the power to make decisions confers utility; see, for example, Rothschild (1971), and Herman (1979).

Thus, there is an a priori expectation that C will not be willing to give away his (their) control. It would be surprising, assuming C has any option, if he (they) chose expansion and as a result lost control, thereby losing the benefits it confers.[14/] More likely is the prospect that expansion and the maintenance of control are chosen and pursued for as far as they are not mutually exclusive. The above accommodates two related ideas. First, that expansion may not be undertaken in certain

cases (at least voluntarily) for fear of losing control. Second, if expansion is undertaken owners will try to keep control too. The former, is a plausible hypothesis and is backed by ample historical evidence, see e.g. Hannah (1976), who considers the 'widespread preference for small, family controlled enterprises ... a considerable brake on mergers' (p. 6, emphasis added), in the early nineteenth century. The subcases of the latter possibility are analyzed in some detail in the next Section.

It is worth stressing that the above behaviour is well in line with individual utility maximization analysis favoured by the managerialists. It merely requires a weak non-satiation assumption: i.e. assuming the consumer - in this instance C - is not satiated in either of two non-mutually exclusive goods - in this case expansion and control - then one would expect both goods to be consumed.[15/]

Nevertheless, it must be asked whether or not this a priori expectation can withstand closer scrutiny. The possibilities can be explored by considering an expanding firm's need for finance and managers.

2.3 An Expanding Firm's Need for Finance and Managers

First of all, consider the issue of shares.[16/] Broad corporate objectives can be voted upon and therefore determined at shareholders' meetings. The ability to win such votes can thereby determine who controls a firm. Thus, possession of sufficient votes can imply control.

Moreover, it is generally accepted that it is not necessary to have 51% of the shares to win a vote. For example, using a probability model Cubbin and Leech (1983) suggest that well under 10% may be more

than sufficient, 2% or even 1% being enough in some cases. In practice, therefore, it could well be that in obtaining finance for the expansion of firm F, C retains a sufficient shareholding to maintain control. This is crucial: since it demonstrates that under the utility maximization assumption favoured by the managerialists, on the part of the original owners, one should not expect causality to run from ex-post observed shareholding percentages to control, but rather the other way around. That is, it is more plausible and historically consistent to assume that C will obtain finance from shareholders, but also keep enough shares so as to ensure their control.[17/]

In reality, however, C may not have access to the financial reserves that allow the holding of a controlling interest. One of two outcomes can be expected in this situation.

Given the benefits of control, C's first reaction will be to attempt to collude with another shareholder to form a controlling interest. It seems reasonable to assume that the costs of such collusion will, at least amongst a few shareholders, be very small compared to the benefits;[18/] a few well-timed business lunches, for example, may suffice. Following, for instance, Cubbin and Leech (1983), the exact number of shareholders needed in the controlling group depends upon the share distribution and the voting behaviour of shareholders. However, the only case where collusion amongst more than a few shareholders will be necessary is where there is another group of shareholders competing for control. There would then be a struggle between these groups, one of which would emerge as in control - or, indeed, the groups may join forces. In any event, a group of shareholders - capitalists - will control the firm.

Neither of these expected outcomes will be realized if owners mis-

judge the critical percentage of shares necessary for control. This is a feasible possibility in exceptional cases but, if managerialism is to be accepted as realistic, it implies acceptance not only of the assumption that, in default of owners control, managers control, but also of the view that all owners in all firms misjudge the critical percentage. Can it really be believed that all owners are incompetent ? Surely not. Moreover, even where an exceptional mistake is made, recognising this owners can be expected to form a new cohesive group and regain control.[19] The conclusion to be reached thus far is therefore that it is reasonable to hypothesise that a subset of owners - i.e. capitalists - control firms.

A further argument advanced by managerialists focuses upon information,[20] namely: the many small shareholders in a firm do not have the information to monitor managers - i.e. they do not have the information to determine whether or not their interests are being served - and therefore do not control the firm. This directly contrasts with the neoclassical approach, in which all shareholders are taken to have, and to act upon, this information. See, for example, the exposition in Lambrinides (1973). What can be said of these two views ?

Firstly, they reveal that our hypothesis of capitalist control implies that capitalists:

(i) can win a vote amongst shareholders, and

(ii) have the information upon which to vote.

That is, (i) and (ii) are both implicit in the statement that, for instance, 1% of shares suffices to control a firm. This is a plausible hypothesis. It seems reasonable to suggest that capitalists will assess and obtain the information they need for control. Why ? Although

obtaining information is not costless, the reward is the power to determine a firm's strategy. The benefits of the latter can be expected to warrant the acquisition of information.

This is not to say that managers have no discretion in their behaviour. In a world of uncertainty, there will always be discretion. But the crucial factor to realise is that this discretion is analytically parallel to that of workers. Similarly to the way in which the controller of a firm may be unsure what the worker can do, there may be uncertainty surrounding managers.[21] Capitalists will not base their strategic decisions on perfect information, either as regards workers or managers. Nevertheless, imperfect information does not constitute failure to make the decisions.

The reason that less than 51% of shares is needed to control a firm - and thus a reason that the neoclassical approach is incorrect - is that many, indeed the vast majority of shareholders, obtain their shares to receive dividends or capital gains, content in the knowledge that other shareholders are concerned with these issues. One possibility is that this vast majority is not interested in monitoring a firm's activities - perhaps, for example, they have complete trust in the minority controlling shareholders. Or it could be that each small shareholder considers futile an attempt to win a vote against a large shareholder. Then again, perhaps the vast majority cannot acquire information about the firm - for instance, they may have no "contacts" in the firm or industry.[22]

But are we to believe this of C ? More generally, are we to believe that larger shareholders will simply ignore corporate strategy and give managers, for example, a free hand ? Surely not.[23] Whilst their information may not be perfect, it is most unlikely that they get

themselves into a position where it is non-existent, given the benefits of control. This view is supported by the fact that high level managers are normally recruited from the ranks of owners, or at least their close environment.[24/] That is, they are owners themselves, and/or owners functionaries. See, for example, Nichols (1969), Nyman and Silberston (1978), and Francis (1980a). From this, it should be expected that high level managers have interests closely connected with owners rather than low level managers, and therefore will assist capitalists in their control of the firm.[25/] However, it should not be expected that capitalists only acquire their information from high level managers; rather, they will use outside sources, and indeed, their own wits in reaching their decisions.

Consider now another possible argument for manager control, albeit one apparently absent in the existing literature. This is the view that managers are in such short supply that they can demand control of the firm as the price of their services. C would pay this price if he (they) believed he would be better off as a shareholder in a manager controlled firm rather than himself controlling the enterprise.

Note firstly that this is a bargaining problem again analytically parallel to the owner/worker relationship. For example, when a skilled craftsman is employed by a firm, a price is negotiated. It is theoretically possible that skilled craftsmen can demand control of the firm as the price of their services. Similarly, owners negotiate with managers.[26/]

Moreover, in reality this theoretical possibility of manager control is at most likely to be no more than a passing phenomenon. In the first place, the supply of managers is endogenous to the system, and at least partly determined by a firm's controllers.[27/] Managers are

needed to administrate. As with all "talents", the ability to administrate varies across the population, but at least to a large extent it is something that can be learnt. It is no coincidence that numerous schools of management have emerged simultaneously with expanding firms.[28/] It is clearly in the interests of capitalists to encourage such schools. Moreover, firms can introduce internal training schemes, thereby producing their own administrators. Secondly, if the price of a manager is control, it is by no means clear it will be paid; after all, the consequence of transferring control is the inability of the capitalist to protect his/her interests: for the individual capitalist this is a heavy price indeed.[29/]

There is also a third, more important comment to be made. Suppose managers could demand control. Would they leave it at this ? By definition of their position, capitalist could, if the supply of managers subsequently increased, sack their existing management and reclaim control. That is, capitalist control is at least only dormant. If managers act as if they have control, it is because it is allowed by capitalists. Thus, if managers have such a strong bargaining position, they should be expected to require shares as part of their payment. By becoming owners, they safeguard their control. But this is then capitalist control of the firm, not manager control.

The notion that capitalist control is at least only dormant is important. It was seen earlier when it was argued that capitalists could regroup to regain control if they misjudged their position. A crucial conceptual difference between capitalists and managers is that the former can choose whether or not they determine a firm's strategy. In this sense, managers always take a back seat.

Thus, the conclusion to be reached from the analysis in this and

the previous Subsections is that it is reasonable to hypothesize that a subset of owners - capitalists - control firms. An aspect of the analysis deserving particular emphasis is the inversion of causality as compared to managerialism. Rather than examining ex post what percentage of shares capitalists need for control - as managerialists have done - it is better, bearing in mind the benefits of control to examine what percentage a subset of owners will allow others to obtain before control is lost. The share distribution observed in reality will then be one which suffices to give control to a subset of owners.

Such an approach accommodates two related ideas:

(i) the concept of fixed shareholding percentages as used by managerialists is artificial, and

(ii) the percentage of shares required for control may vary across firms - in one, for example, it may be 1%, in another 5%. The outcome depends upon the distribution of ownership, groupings amongst shareholders and on whether control is internally or externally exercised. See Herman, (1979).

The approach to control we suggested starts from the historically undisputable and generally recognized fact that originally ownership and control were a unity: and that historically part of the ownership has been divorced from this unity, leaving in our view partial ownership and control where formerly absolute ownership and control existed.[30/] Managerialists start from inversing the historical process: i.e. by observing partial ownership and inferring non control. Thus managerialism

has a historically inconsistent perspective. It is this difference in perspective that makes managerialism less appealing than our approach.

A further criterion for choice between the approaches is the empirical evidence that can be marshalled - either direct evidence, or indirect evidence that examines implications of the approaches. This is the concern of the next Section.

Before, it is worth stressing a similarity between the managerialist and the neoclassical approach. That is, they both share the belief that there is no dominant capitalist subset of the owners that control the firms. This perhaps explains why managerialism was so easily accepted and assimilated by orthodox economists. See also Chapter 2.

In Figure 1, the approach advanced in this Chapter is summarized in a diagrammatic framework. In beginning with firm F owned and controlled entirely by individual(s) C, expansion implies a need for finance and management. The former results in the issue of shares. The original and/or new owners assess the percentage of shares required for control. If their assessment is correct, shareholders are divided into capitalists and others, capitalists having control. If it is wrong, control passes to non-shareholders, but there will be a re-assessment of the critical percentage needed for control. As regards managers, if they are in short supply they may become owners and thus controllers: i.e. capitalists.

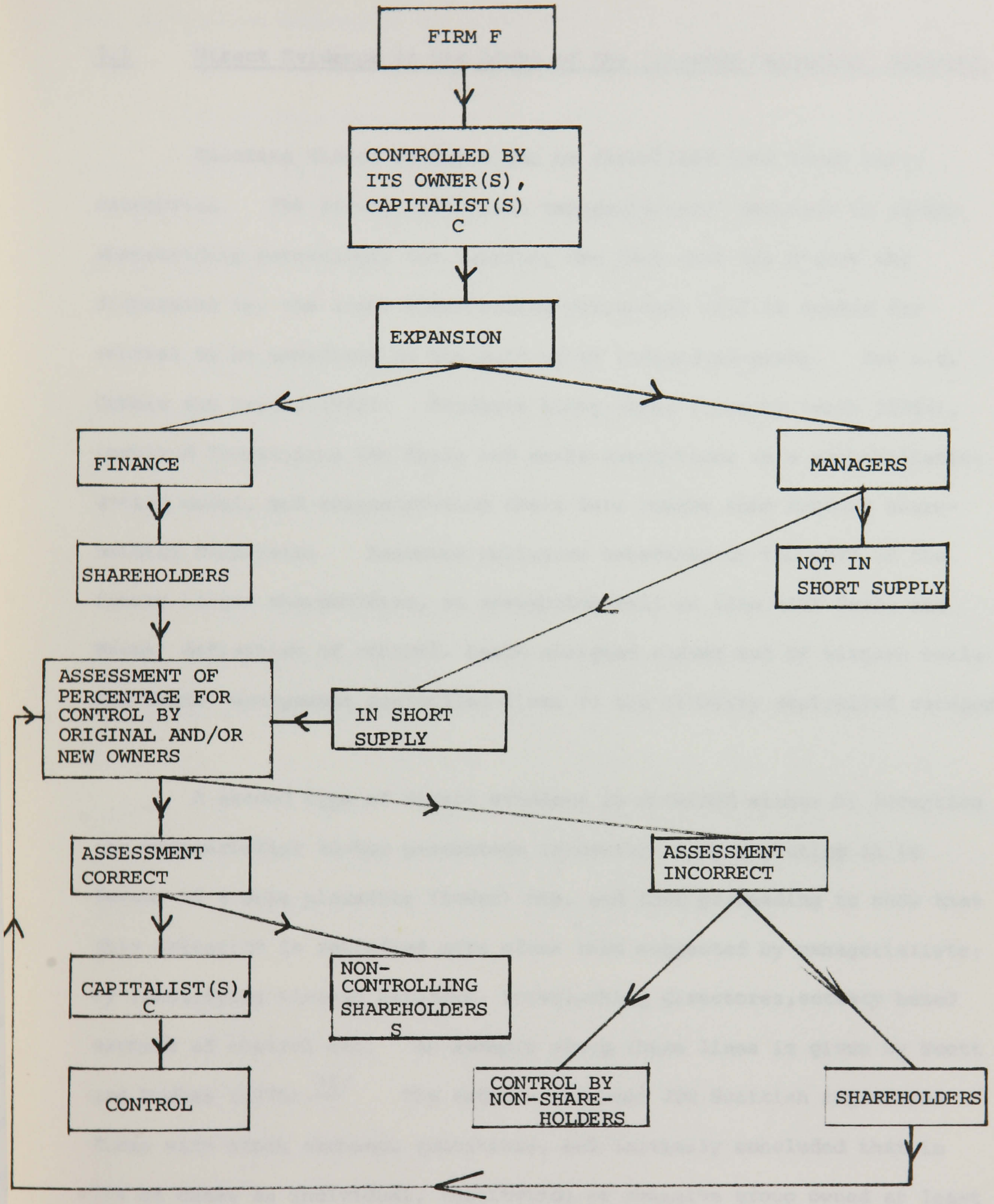

FIGURE 1 : CONTROL OF THE FIRM

3. CONTROL OF THE FIRM : THE EXISTING EVIDENCE

3.1 Direct Evidence in the Light of the 'Inverse Causality' Approach

Existing direct evidence can be classified into three basic categories. The first, criticises managerialists' reliance on ad-hoc shareholding percentages for ignoring the fact that the higher the dispersion is, the lower shareholding percentage will be needed for control to be exercised on the part of an individual-group. See e.g. Cubbin and Leech,(1983). Evidence along these lines by Leech (1984), involved formalizing the Berle and Means assumptions in a probabilistic-voting model, and reinterpreting their data taking into account share-holding dispersion. Assuming collusive behaviour on the part of the twenty larger shareholders, an assumption well in line with Berle and Means' definition of control, Leech assigned eleven out of sixteen Berle and Means' management controlled firms to the minority controlled category.

A second type of direct evidence is obtained either by accepting the managerialist ad-hoc percentage criterion or by rejecting it in favour of a more plausible (lower) one, and then proceeding to show that this criterion is satisfied more often than suggested by managerialists: by identifying kinship networks, interlocking directores,secrecy based methods of control etc. An example along these lines is given by Scott and Hughes (1976).[31/] The authors analyzed 220 Scottish registered firms with stock exchange quotations, and initially concluded that in 77% of cases an individual, institution or cohesive group owned at least 5% of shares. These were classified as owner controlled firms. Then some of the residual 23% were examined in more detail. Sure enough, owner control was found to be more widespread than initially concluded. For example, the Scottish and Continental Investment Trust was included

in the 23%, but closer study revealed that nearly 20% of its shares were held by various members of the Murray Johnstone group of investment trusts.

The evidence along these lines is huge, and it is far beyond the scope of this Chapter to survey it. A detailed summary is given in Scott (1979). Suffice it to say that all such evidence suggests that emphasis on the presumed managerial dominance is misplaced, to say the least.

Both types of evidence surveyed above are very important: in that they question managerialism in its own framework. They do not however, question the managerialist perspective, and in this sense they do not take the analysis much further.

A third type of direct evidence constitutes a departure from share-holding distribution analysis. It attempts to examine the policies actually pursued by companies and tries to assess whether or not they appear to be determined by owners or managers. Evidence along these lines has been given by Francis (1980). Francis argued that, within a firm, the Chairman of the Board plays a vital role: apparently a clear result of the Oxford Growth of Firms Project upon which the analysis was based:

> "From observation, from interviewing and from administering a questionnaire in the companies in our study it was clear that the Chairman of the company was in a very dominant position. His role was viewed, both by the incumbent and by senior managers, as the peak of the firm's organizational hierarchy and not merely a primus inter pares at Board meetings. His influence in decision making was acknowledged by all to be powerful." (p. 12).

Thus, Francis concludes that a detailed examination of who the chairman is - for example - an owner ? - or how he came to be appointed - e.g. by

owners ? - will reveal the centre of control.

Time constraints restricted his study to a mere 17 firms. Nevertheless, the result is very illuminating: (at least) 15 of the firms were classified as owner controlled, and (at most) only 2 as controlled by their own professional management. These 17 firms were randomly drawn from a sample of 227 of the "top 250" U.K. companies in the "Times 1000" (1975-1976). Of these 227, in 110 - i.e. 48% - at least 5% of shares were owned by an individual, institution, or cohesive group. Admittedly 17 is a very small sample, but the proportion of owner controlled firms in the more detailed study was classified as 88% !

Such results are consistent with the analysis of Section 2. However, the implication of the latter would be that the two management controlled firms found by Francis are either exceptional cases or, in a still more detailed examination, would be revealed as owner controlled.

Unfortunately, such evidence is not easily acquired. Although Francis' approach is very useful in highlighting the inadequacy of the fixed percentages type of criteria, and indicating that a more elaborate analysis is far from supporting the managerial approach, it is not conclusive.[32/]

Other direct evidence consistent with the analysis of Section 2 reported cases of owners in fact replacing managers. For instance, Nyman and Silberston (1978) discuss the case of a group of dissatisfied owners bringing about the replacement of senior managers in two U.K. companies, Vickers and Debenhams. Similar cases are reported in Herman (1979). Note, however, that such evidence is not entirely inconsistent with managerialism which recognizes the existence of such possibilities,

but considers them as exceptional cases.

The conclusion of this Subsection is that all existing direct evidence is never inconsistent with our approach, while it is often inconsistent with managerialism. The same is true with the indirect evidence we are examining in the next Subsection.

3.2 Indirect Evidence

Indirect evidence involves focusing on presumably different implications of two (or more) different approaches. Emphasis on this front was given to the issues of profit versus sales growth maximization, the unprofitability of mergers and the 'excessive' retention ratios. The dialogue was largely between managerialists and neoclassicals: i.e. either managers control the firms, or all stockholders control the firms, and its results were inconclusive. See Section 1.

In this Subsection we focus on two issues: the transition to the M-form organization, and the differential propensity to save household income and corporate retentions. We suggest that the former is consistent with our approach and neoclassicism, but inconsistent with managerialism: while the latter is consistent with our approach and managerialism, but inconsistent with neoclassicism. Together the two may be taken to imply support for our approach.

As already emphasised, the idea that owners control does not deny the possibility of managers having discretion in the day-to-day decisions of a firm. Although such discretion does not constitute control, it does imply the possibility of managers attempting to change a strategic decision - see again Section 2.1. However, the original

controllers can be expected to resist such a change, if it is attempted, and indeed to preempt the possibility of an attempt. Within this framework, the phenomenon of the transition of most firms in the U.S., U.K. and Europe from a so-called U-form organization to an M-form organization can be explained.

The U-form organization is characterised by a board of directors and various divisions each responsible for a specific function - such as production, marketing, etc. - throughout the firm. Williamson (1970) has suggested that, as a U-form expands, there is a tendency for decisions over broad corporate objectives and the day-to-day operations of the firm to become entangled. In contrast, an M-form organization is characterized by a board of directors responsible solely for determining strategic decisions, and a series of operating divisions - each responsible for its own production, marketing, etc. - making day-to-day decisions. Thus, the transition from U-form to M-form can be explained in terms of control. In the M-form firm, broad corporate objectives are determined by the board, which is only concerned with such issues. This allows the 'controlling group' to focus upon the relevant control issues more easily than in the U-form organization.

An interpretation along similar lines is given in Herman (1979). By reducing interdependence and establishing each division as a profit centre, he observes, the M-form 'enlarged the possibilities for centralized evaluation and control.' (p. 104).

The existing evidence on this issue is of the indirect form examined early in this Section. It involves testing for superior profitability on the part of the M-form as compared to other forms. All existing empirical work in the U.S. and the U.K. have made clear that

the M-form is more profitable. See, for example, for the U.K. Steer and Cable (1978) and Thomson (1981), and references therein. Under the assumption that managers are not profit maximizers while owners are (but see Section 1), the above evidence is consistent with our approach and neoclassicism but not with managerialism.

In particular, in our theoretical framework, the transition to M-form can be seen as a response by capitalists to the possibility that the continuously increasing 'control loss' (see Williamson, 1967), that results in large organizations due to the multiplicity of decision layers, becomes 'loss of control'.[33/]

Besides the evidence on profitability, there is a more important reason why the transition to the M-form is inconsistent with traditional managerialism: the resultant constraint of low level managers to nothing but day-to-day decisions. The only way managerialists could offer a sound explanation for that, would be by arguing that a conflict arose over, say, their respective degree of control between low level managers and high level managers (i.e. those having contact with the board). But this would merely undermine the very foundations of managerialism. Evidence referred to in the previous Section on the class origin of high level managers and their connections/relationships with owners takes on great importance. If, as posited, high level managers are owners themselves, or owners functionaries, the observed conflict would in fact be one of owners versus managers, not an endo-managerial conflict.

The above are supported by Herman (1979). He observes that 'Oliver Williamson notes the irony of the almost simultaneous appearance in the 1930's of concern with separation of ownership and control and potentially large management discretion and the rapid spread of divisionali-

zation with its effects of restoring integrity to the goal-specification and policing processes' (p. 106). We only differ from Williamson in that we see capitalist control where he sees 'irony'.

In fact Williamson's more recent views on the ownership versus control issue, further support our idea that the transition to M-form is only consistent with our views, or neoclassicism. After noting the confusion between strategic and operational decisions in the U-form structure, that the M-form served to rectify, Williamson (1981) suggests, that by activating the market for corporate control management was brought under the scrutiny of the general office, which 'can be regarded as an agent of the stockholders whose purpose is to monitor the operations of the constituent parts' (p. 1559). The Berle and Means findings are attributed by Williamson to the then prevalence of the U-form and the conclusion is that the dilemma of corporate control posed by Berle and Means has since been alleviated more by internal organizational reforms than by regulatory or external ones.

By accepting the Berle and Means findings and suggesting their 'alleviation' because of the M-form, Williamson effectively implies a counterrevolution on the part of the stockholders. We will hold to our more moderate position that the M-form might have been an attempt to preempt rather than rectify a potential loss of control on the part of the owners, and remind the reader that we regard the 'general office' as the agent of a subset of the stockholders only: i.e. capitalists. Still our points of agreement with Williamson as well as all the existing evidence demonstrate, we think, that the transition to M-form is consistent with our views and neoclassicism but not with managerialism.

A second important implication of our approach is consistent

with our views and managerialism but not with neoclassicism. It regards the issue of the impact of capitalist (or managerial) control of firms on other individuals' choice over their consumption and savings and as a result on financial capital accumulation. This issue is analyzed extensively in the next Chapter and empirical results are given in Part II, Chapters 5 and 6. In brief, the existence of a 'controlling group' (capitalists or managers) that exhibits a stronger preference for internal finance (retained earnings) than the rest of shareholders, coupled with the inability on the part of the latter to compensate for the controlling group's decisions by appropriately manipulating their personal savings, will establish a differential 'propensity' to save personal income and corporate retentions: i.e. a higher 'propensity' to save retentions. This view is shares by both managerialism and our approach but not by neoclassicals, see e.g. Ando and Modigliani, (1963), who suggest that the 'propensity' to save personal income and retentions will be the same due to households' 'ultrarationality' or their ability to 'pierce the corporate veil'.

The evidence along these lines is substantial, see next Chapter for a survey, and conclusively rejects the neoclassical implication of equal 'propensities': which demonstrates that this implication is consistent with our view and managerialism but not with neoclassicism.

From the above, we infer that all existing direct and indirect evidence is consistent with our approach. The hypothesis that capitalists control performs at least as well as the existing alternatives on all counts and better than the one or the other on some occasions.

SUMMARY

By following a historically consistent approach to the theory of the firm, it has been argued that a subset of owners - capitalists - can plausibly be expected to control firms. Particularly important is the inversion of causality that leads to this result: rather than examining ex post the percentage of shares needed for control, it is better, bearing in mind the benefits of control, to examine the percentage capitalists will allow others to obtain before control is lost.

Moreover, although the plausibility of this capitalist control hypothesis implies that the burden of proof lies with those favouring its alternatives, the hypothesis performs at least as well as alternative approaches when confronted with existing empirical evidence, direct and indirect.

NOTES

1/ See also Fitch (1972).

2/ The idea in Marx is that the new 'capitalist' may be more risk prone, as what s/he endangers is only partly his/her own money. Hilferding, on the other hand, entertained the possibility that the interests of the non-controlling shareholders will act as a constraint to the 'capitalist' greediness for profit, and thus, it will increase the degree of rationalization in the corporation, and as a result profits.

3/ Berle and Means suggest that the controlling group, even if owners themselves, can serve their pockets better by making profits at the expense of the company rather than for the company. Gordon, suggested that the emphasis on profit maximization may be less under managerial control, than under owners control.

4/ According to both arguments unprofitable mergers and/or high retention ratios imply managerial dominance, as being incompatible with the shareholders preferences. Both views, however, have little evidence to support them. Aaronovitch and Sawyer's (1975) detailed analysis of the former question led them to conclude that 'in as far as between firms' differences are important for merger activity, they are consistent with a varied 'mixture' of ownership/control, and therefore firms with very varied characteristics may be involved in merger activity' (p. 189). High retention ratios, on the other hand, are at least as compatible with capitalist control as with managerialist. See e.g. Kalecki,(1971) and next Chapter.

5/ This definition diverges from the orthodox Marxist emphasis on ownership and control, as the 'differentia specifica' of the capitalist class. It is however, well in line with Hilferding's insight and it is, we think, indispensable if one wants to reasonably retain the term 'capitalist class' today.

6/ A discussion largely absent in other work by economists.

7/ Such as, a totally incapable management.

8/ In an interesting analogy Miliband (1973) quotes Kautsky : 'the capitalist class rules but does not govern ... it contents itself with ruling the government' (p. 51). One could be willing to substitute 'government' for 'management' to obtain the essence of our arguments.

9/ One needs also distinguish between external and internal control. See e.g. Cubbin and Leech,(1983) for a discussion. It is often suggested that control of the firms today is exercised 'internally'. See e.g. Baran and Sweezy,(1967). The existing evidence, on the other hand, suggests that the same shareholding percentage may be sufficient for an 'insider' or 'founder' to retain control, but insufficient for an outsider to gain control. See Herman, (1979). This, we think, provides our hypothesis with further

support: since capitalists are by definition the 'insiders' from the very beginning.

10/ In this sense only can one talk of a managerialist revolution: i.e. the increased need for supervisory staff. Thus, Sawyer (1979) distinguishes between two managerialist revolutions. The above is the one, while the managerial control argument is the second.

11/ Particularly, if profits are exceptionally unsatisfactory. See, e.g. Gordon (1952).

12/ See also Herman (1979)

13/ See the discussion of firms' organizational form - an issue taken up in Section 3 - in Cowling (1982).

14/ Historical evidence along these lines is given in Hannah (1976).

15/ Evidently this may not be true in individual cases. That is, an individual capitalist may decide to part with control for reasons associated with the quest of an entrepreneurial family, for higher profits, through superior management, (see Herman, 1979), or for reasons associated with his/her age, need for security, empire building considerations etc. It is also conceivable that heirs do not exist and/or the need for finance introduces in the picture financial institutions and/or other industrial firms. Death duties may also break some estates, although at least for the U.K. the historical evidence would not appear to support this view. See Hannah,(1976). In all these cases it does not follow that managers will gain control. 'Naturally', control will pass to capitalist's heirs and/or other industrial firms and financial institutions. It is also conceivable that the capitalist has expressed his/her explicit preference over his/her potential successors. See also Nyman and Silberston,(1978). That control will pass to managers is just one of the possibilities: to us the least plausible too. Some historical evidence that support the idea that owners will prevent managers from gaining control is reported in Marglin (1974).

16/ Although finance can also be obtained by borrowing, e.g. from financial institutions, one would expect that the original controllers will not be indifferent regarding the two ways of obtaining capital. In particular, capital possessed by financial institutions is normally more concentrated than that possessed by the vast majority of households. See Zeitlin (1974) for evidence. Such concentration facilitates the possibility of financial institutions asking a higher price for capital. They could, for example, require that a certain strategy be followed, i.e. they could demand control as the price of their funds. Such an outcome, does not change the picture of capitalist control, on the aggregate: it may, however, be undesirable on the part of the individual capitalist who incurs the loss.

17/ Similar arguments are made in Aaronovitch (1961), Aaronovitch and Sawyer (1975) and Francis (1980). However their implications (i.e. the reverse causality argument) are not explored.

18/ This is a widely accepted idea among managerialist writers too. In particular, it is consistent with Berle and Mean's definition of 'minority control' albeit its logical implications are not examined by Berle and Means. See Leech,(1984).

19/ Evidently, this need not include the original controllers.

20/ 'What the chief executive approves depends in good part on what filters up to him for approval' (Gordon, 1952, p. 160).

21/ That is to say, uncertainty will have efficiency and/or distributional effects: not control effects. As a consequence of this, capitalists will try to persuade and cajole workers and managers into adopting their objectives.

22/ Another means of ensuring shareholders' 'apathy' is for the controlling group to make use of preference and debenture shares, as well as to divide shares to voting and non-voting ones. See e.g. Herman,(1979).

23/ Marx (1959) quotes Aristotle: 'Whenever the masters are not compelled to plague themselves with supervision, the managers assume this honour, while the masters attend to affairs of state or study philosophy'. (Vol.III, p.385, emphasis in the original).

24/ This is not to say that middle and working class people are precluded from gaining high managerial posts. It is to say that such mobility to the top - whenever possible - does not imply that the middle or working classes seized control. More plausible it is that managers who have risen to the top were paid part of their salaries in shares or share options, thus becoming themselves capitalists. See Sawyer,(1979). The other possibility is ideological assimilation. See e.g. Miliband,(1973) and Gerth and Mills,(1952).

25/ On aggregate the problem of managerial control does not exist in the sense that a failed capitalist who lost control to his/her workers and/or managers, is substituted by workers and/or managers who have been transformed into capitalists. For the individual capitalist, however, failure does matter: which justifies his/her concern for control.

26/ Moreover, a technical indispensability, does not necessarily represent a prospective claim for control. See Gerth and Mills, (1952).

27/ See also Reagan (1971).

28/ What is more, the cost of this to firms has been minimal as such firms are often state financed.

29/ Albeit, as we explained, not for the capitalist class as a whole.

30/ In this framework the takeover phenomenon can be viewed as a process where historically Big Capital (non-unitary) takes control over Small Capital (unitary). Control, that is, is lost to Big Capital, not to managers: a possibility conceivable only in exceptional circumstances and as a transitory phenomenon. See also note 25.

31/ See also Zeitlin (1974), Nyman and Silberston, (1978), Scott (1979) and Francis (1980).

32/ One could suggest that the chairman of the board criterion, albeit an advancement over the ad-hoc percentages criterion, is still ad-hoc.

33/ Note that the 'control loss' idea as expounded e.g. in Williamson (1967) is a result of the existence of a multiplicity of decision layers in complex organizations. It does not imply or mean loss of control.

CHAPTER 2

Corporate Finance, Social Choice and Financial Capital Accumulation : The Role of Corporate Retentions and Pension Funds*

* This Chapter relies on, and extends ideas that first appeared in Pitelis (1983a), and the theoretical part of Pitelis (1984). Earlier versions of these papers were presented at Industrial Economics Workshops at Warwick and Research Students Workshops at Warwick. The former, has also been presented at the Workshop on Organizational Development, London Business School, December 1983. The latter has been presented at the Econometric Society European Meetings, Madrid, 1984.

INTRODUCTION

In this Chapter we examine the impact of the process of the socialization of the 'ownership' of the means of production through the joint stock company, on social choice and financial capital accumulation. We identify two stages in the above process: the first is shareownership through which part of shareholders' income is retained in the corporations in the form of retained earnings: the second is the introduction of corporate (private or occupational) pension funds schemes through which part of wage earners' potential income is retained at source: i.e. 'deferred'. Both result in bringing tremendous financial resources to the disposal of the corporate sector. Corporate retention policies received substantial interest, particularly on the part of managerialist writers and their neoclassical critics. Corporate pension funds are currently the focus of debate and controversy.

The general question we attempt to answer is as follows. Is there a link between the corporate 'controlling group's' policies on retentions and pension funds, and non-controlling shareholders' and/or wage earners' choice over their consumption-saving patterns ? How does this link affect financial capital accumulation ?

Theoretical work explicitly focusing on the above questions exists only for the case of retentions. In the case of pension funds emphasis has been given to the empirical testing of the neoclassical predictions. Analysis on retentions, however, can fairly smoothly be extended for the case of pension funds too.

In Section 1 we focus on retentions. In 1.1 we analyze the arguments of the neoclassicals, managerialists and radical writers on

the issue. We suggest that they all rely on a classless, or classes do not matter framework. In 1.2 we propose an asymmetrical choice approach which pursues a different analysis for the controlling and non-controlling shareholders of corporations. We suggest that the neo-classical arguments may be correct for the 'controlling group' but they fail to explain the behaviour of non-controlling shareholders.

In Section 2 we focus on pension funds. In 2.1 we examine some economic aspects of the pension funds growth. In 2.2 we criticise the neoclassical arguments on the issue, by pursuing a similar approach as in the case of retentions. We suggest that the neoclassical arguments fail to explain wage earners' behaviour.

In Section 3 we survey all existing empirical evidence on this question, and conclude that it rejects the neoclassical hypothesis. Finally, Section 4 expounds our views on the role of capitalist control and the joint stock company on financial capital accumulation.

1. CORPORATE FINANCE, SOCIAL CHOICE AND FINANCIAL CAPITAL ACCUMULATION : THE CASE OF CORPORATE RETENTIONS

1.1 The Contestants

Attempts to analyze the impact of the corporate 'controlling group's' decisions on shareholders' choices on consumption-savings and financial capital accumulation, can be classified in three different schools: the neoclassical, the managerialist and the radical.[1/]

In the neoclassical school three variations can be identified. For Solow (1967) the capital market discipline ensures that in effect all

stockholders are in control of firms. Corporate retention policies, therefore, will be the reflection of the collective consensus of all shareholders. No link exists therefore between a'controlling group's' decisions on retentions and financial capital accumulation: since there is no'controlling group.' Both the retention ratio[2/] and the private saving ratio[3/] reflect all stockholders' choices.

For Modigliani (1970), the possibility that firms are management controlled - or otherwise - is allowed, albeit implicitly: by allowing the retention ratio not to reflect all individuals' preferences. It is argued however, that individuals consciously following a strategy of intertemporal utility maximisation over their consumption-saving patterns, will, realising that their total (corporate plus personal) savings, exceed the level they would have chosen, if in control of firms, try to compensate for corporate retentions' increases by sufficiently reducing their personal savings. Under certain assumptions, perfect substitutability between corporate and personal savings will be possible, which will result in the private saving ratio being the reflection of all shareholders' preferences.

For Harrod (1948) finally, it is 'conceivable that corporate savings might exceed the total that all individuals would be disposed to save ...' (p. 48). As a result increases in corporate retentions will increase private savings by a proportion bigger than zero but lower than one, implying imperfect substitution between corporate retentions and personal savings. Thus Harrod allows both the retention ratio and the private saving ratio to diverge from (some of the) shareholders'preferences.

Harrod gave no explanation for the reasons underlying his suggestion that imperfect substitution is possible. Perhaps partly because of that, the predominant neoclassical view is that of perfect substitution. Harrod's

idea of imperfect substitution, however, has been revived in the work of managerialists: albeit the underlying reasoning differs.

The managerialist implication of imperfect substitution is based on two requirements: first that managers control the firms and maximize a utility function that differs from that of the shareholders. Second, that managers exhibit a stronger preference for corporate retentions than the rest of shareholders. This is based on the idea that, for corporate retentions to increase, shareholders should abstain from current consumption. In our consuming society - another major premise of managerialists - such an abstention will constrain shareholders from exhibiting a strong preference for retentions; (although some preference is to be expected, due to expected capital gains and tax advantages).

Since managers are assumed not to own shares, such an abstention is not required on their part. Given their control on corporations, observed corporate retentions are expected to be higher than the ones desired from the ordinary shareholders: of course, under the proviso that corporate retentions are either an independent argument of managers' utility function or that they act through one or more of its arguments.

The satisfaction of this proviso is the missing link in managerialism. When found the loop is closed. Managers control, impose their preferences over shareholders and corporate retentions increase. Moreover private savings - financial capital accumulation - increase, provided that there is not perfect substitutability between corporate retentions on the one hand and personal savings on the other; that is provided that increases in the former are not exactly compensated by reductions in the latter.

For managerialists, finding the missing link was not too difficult

a task. As far back as 1937, Kalecki (see e.g. his 1971 collection) was strongly arguing for the existence of a preference on the part of the 'controlling group' of the firms, for internal finance; chiefly due to the risks associated with external borrowing. We only have to substitute managers - the new controllers - for Kalecki's 'controlling group'- capitalists -, and here we are. Indeed both Marris (1967, p. 199) and Galbraith (1967) did it. The latter in a very rhetorical manner too.

> "Control of the supply of savings is strategic for industrial planning ... . Apart from the normal disadvantages of an uncertain price, there is a danger that under some circumstances supply will not be forthcoming at an acceptable price. This will be at the precise moment when misfortune or miscalculation has made the need more urgent ... . Money carries with it the special right to know and even to suggest, how it is used. This dilutes the authority of the planning unit." (pp. 55-56).

There are other reasons why managers will be expected to express a preference for corporate retentions. As Marris (1967) observes, the latter have an accelerating impact on the growth rate of managers' bonuses (ibid p. 69). In addition there are tax advantages associated with retained earnings. See e.g. Hay and Morris,(1979).

On the substitutability issue the managerialist preference for imperfect substitution has been expounded by Marris (1967). In its simplest form the Marris argument is as follows. Suppose all profits are distributed to shareholders as dividends. Then, Marris suggests, some shareholders will definitely increase their consumption, while some others will keep it constant. The very existence of retentions implies that consumption is reduced by the exact amount by which some individuals would have increased their consumption, in the absence of retentions. Thus increased retentions, increase the private saving ratio. For perfect substitution to be true some individuals would have to reduce their consumption in case they were

given all profits as dividents: which Marris finds difficult to believe.

Thus his conclusion is:

> "that under the actual circumstances of both today and yesterday, long run variations in the retention ratio must cause long run variations in the national propensity to save (in the same direction, of course, but smaller in magnitude), even when distributive shares are held constant." (p. 295).

Given managerial control, the above can be taken to imply that managers' policies induce a flexibility on the private propensity to save, i.e. give managers an ability to increase it, subject, of course, to constraints associated with the market valuation of shares and the related risk of takeover raids.

In itself, however, this ability does not imply that a crucial role is played by managers with regard to the capital accumulation issue. To say so, what is required is the further proposition that in their absence no other societal group exists which would be willing to undertake such a role - save enough, for the maintenance of the capitalist mode of production to be warranted. Why is that ? Managerialists answer by another attack on the neoclassical orthodoxy. What for traditional microeconomic text-books on consumer theory, see e.g. Green(1971) is taken to be a curiosum - that is to say advertising and the selling strategies of the firms - finds in managerialists its apotheosis. Consumers preferences are effectively controlled by Madison Avenue: meaning,they are too malleable to be relied upon for such important issues as capital accumulation. As Galbraith (1967) puts it:

> "it would be highly inconsistent for a society which so values consumption, and so relentlessly presses its claims, to rely on consumers, through their savings, for its capital ... . In a society which so emphasises consumption and so needs capital the

> decision to save should obviously be removed from the consumer and exercised by other authority:" (ibid. p. 55):

which in modern capitalist societies is done "In the main by the management of a few hundred corporations." (p. 57).

On the face of it the managerialists' alternative appears to bear hardly any similarity to neoclassicism. Where the latter see perfect harmony, managerialists see hierarchical control: instead of the neoclassicists' assumption of perfect knowledge on the part of all consumers they see the malleability of the latters' preferences. However, if one wants to go a bit deeper, the managerialists' differences from the neoclassical orthodoxy become less obvious: since they both reject the idea that a subset of the shareholders exists, whose ownership stake can warrant their control, over the means of production. See also Chapter 1.

This question is simply assumed away by managerialists. They firstly subsume the capitalist class in the dubious terms "share-holders". Then, they proceed to analyze the issue of control by use of ad-hoc measures. Thus the possibility of a capitalist class exhibiting a stronger preference for retentions then managers disappears, simply because such a class no longer exists. Also the reason why capitalists have stopped performing the function of capital accumulation and - they too - consume all their income, does not have to be examined, for the same reason.

The assuming away of a capitalist class, gives rise to the next managerialist assumption; i.e. that managers control the corporations.

Both these assumptions, however, are implausible and inconsistent with the existing empirical evidence. See Chapter 1. Further a preference for internal finance hardly requires managerial control, as we will be arguing in the next Sections. Before doing this, we examine the radical approach to the issue, and in particular the work of Marglin (1975, 1975a).

Marglin's sharp difference from the managerialists, stems from the explicit recognition on his part of the existence of classes and 'class interests' (1975, p. 22). Moreover he explicitly attacks the question in hand - the impact of the location of control on firms, on social choice and financial capital accumulation, and particularly the sub-stitutability issue. His attack on the neoclassical approach is powerful too, since he is able to show its ill-based foundation, not only on theoretical grounds, but also by succeeding in indicating econometrically that a rather simple 'growth of incomes' model of the consumption function can perform at least equally well as the most elaborate of the orthodox models[4/] - Friedman's (1957) Permanent Income Hypothesis and the Life Cycle Hypothesis of Brumberg, Ando and Modigliani: (see Mayer, 1972, for an interesting exposition, and econometric testing and comparisons of the two models).

A more detailed analysis of Marglin's views, however, shows that he fails to break away from the managerialist neo-orthodoxy[5/]: as for every idea of substance advanced by the managerialists, Marglin has a similar view. Let us examine this proposition in some detail.

The crucial elements of managerialism, to which we have already referred can be summarised as follows. Firstly there is a separation

of ownership from control in todays large corporations and control is with managers. Secondly, managers' utility is strongly correlated with corporate retentions. Thirdly, we are living in a "consuming society" where all consumers tend to consume all their income. As a result, fourthly, the rest of the shareholders-owners do not have a preference for corporate retentions as strong as the one managers have. It follows, fifthly, that no perfect substitutability exists between corporate retentions on the one hand and personal savings on the other; which results in the crucial role managers are assumed to play in financial capital accumulation.

What has Marglin to say on this ? On the first question he says :

> "the rate of capital formation remains reasonably high in capitalist societies because hierarchical organisation permits a relatively small number of individuals to decide how much the rest of us will save. If, by contrast, savings decisions were left to individuals - whether capitalists or workers - accumulation of productive capital ... would come to a virtual standstill". (1975, p. 20). "Modern corporate management obliges workers as well as nominal owners of capital to provide for their collective future ..."(ibid. p. 22).

It appears, therefore, that on the ownership-control issue Marglin is with managerialists in arguing that managers and not (other group(s) of) shareholders control firms.

But is it managers who have a strong preference for corporate retentions ? For Marglin,

> "It is undoubtedly more realistic to interpret corporate savings decisions in terms of managers' perceptions of their own interest: managerial power, prestige, and income are all furthered by plowing back earnings". (ibid. p. 23).

As regards the consuming society idea, furthermore, Marglin suggests that:

> "households tend to spend whatever income they can lay their hands on. Households do not save, by and large and on the average, except inadvertently - when their incomes are rising faster than they can adjust their spending". (ibid. p. 22).

With near zero 'disequilibrium' personal savings, it follows that households will be hardly capable of achieving any compensation at all for increases in corporate retentions. That is:

> "there is no systematic relationship (specifically no inverse relationship) between corporate savings and personal savings". (Marglin, 1975a, p. 10).

With the above - rather strong - statement, we see that Marglin effectively advances a new hypothesis - the independence (add-on) hypothesis. This way he differentiates himself from the managerialist position, but not without cost. Since such a position effectively assumes that individuals are either constrained or unwilling to borrow and/or exhaust their possibilities in borrowing - a position very difficult to substantiate indeed. And Marglin's,

> "casual empiricism |which| suggests ... that the overwhelming majority limit their borrowing to the expenses of their education and the basic necessities of life",

(Marglin, 1975, p. 35), in his graduate students' behaviour, example, could hardly be generalised to encompass the richest strata of the society, as he, himself, recognises elsewhere. (Marglin, 1975a, p. 10).

The conclusion is that Marglin's attempt to provide a radical alternative to the question in hand is hardly an advancement of the managerialist neo-orthodoxy. When the existence of classes and 'class interests' (see Marglin, 1975, note 8, p. 22), is recognized, this is only done to immediately disappear under the weight of the classless, overwhelming and irresistable consumption mania. The independence hypothesis, moreover, appears as an integration of Galbraith's idea of a 'consuming society' and Marris' views on substitution: one could also suggest that it is an undue generalization of behaviour which could only be meaningfully attributed to individuals of the lowest income strata. Still Marglin's views have gained widespread acceptance in radical circles, albeit not always an unqualified one. See Chapter 4.

The above analysis justifies, we believe, our suggestion that all neoclassical, managerialist and radical analysis of the substitution issue rely on a classless or classes do not matter analysis. Regarding, in particular the managerialists and Marglin, one could suggest that their attempt to view saving decisions in terms of <u>all</u> households on the one hand and corporations - run by impartial, impersonal and neutral technocrats - on the other, may be unable to provide an adequate analysis of the substitution issue. Our belief is that for a more fruitful analysis one has to recognise the obvious: that <u>corporations</u> and other legal entities of this type did not, <u>do not</u> and are never going to <u>have an independent</u>

existence. They (appear to) live, only through, and for, those who have created them. Anything else than that can only find its place in the realm of metaphysics.

It is a great virtue of Baran and Sweezy's (1967) analysis, that although they have essentially submitted, to the then seemingly conclusive evidence provided by the managerialists,[6] they have never gone as far as positing that firms, rather than (groups of) individuals, do the savings. Thus although:

> "the special managerial interest in a low pay-out rate does exist and is undoubtedly important, ... this makes managers the allies of the very largest stockholders for whom a minimum pay-out rate is also a desideratum. The reason of course is that the very rich save a large part of their incomes in any case, and it is to their advantage for the corporations in which they own stock to do the savings for them rather than pay out dividends from which to do their own savings". (ibid., p. 47, emphasis added).

Thus, capitalists save via their corporations in pursuit of their interests, and not corporations on behalf of households - capitalists and workers alike. From that it follows that a comprehensive approach to the existing link between the location of control on firms and social choice, should explicitly recognize the existence of different classes, and examine the effects of their - potentially different - behaviour on the issue in hand.

Such an attempt we make in the next Subsection. We examine the behaviour of the 'controllling group'- capitalists - and then that of non-controlling shareholders. The analysis is called one of 'asymmetrical choice'[7] to highlight the asymmetry in households' choices over their consumption-saving, as shaped by their (degree of) control, or lack thereof, over corporations.

1.2 Corporate Retentions and Social Choice : An Asymmetrical Choice Approach

The idea that the 'controlling group' of the firms - capitalists - take the strategic decisions has this obvious implication: that, excluding exceptional cases,[8] and on the aggregate,[9] this group's decisions with regard to their consumption-savings patterns are not constrained by the retention policies of the firms: since it is they who take them.

To make the above clear, consider the following scenario. In every specific period, say t-1, the 'controlling group' will control the profits of the firms, defined in the aggregate to be distributed (dividends), plus undistributed (retentions) profits, plus rent and interest. In the same period the group in question decide on their consumption-savings patterns, that is they decide on the part of the income they own (i.e. a proportion of aggregate profits) which they prefer to consume and/or save. Let us suppose that this decision is completed in the same period.

In period t we observe the effects of the completed decision, namely a part of the 'controlling group's' income in the form of savings and the other in the form of consumption. The part, however, saved will have taken either of two forms:

(i) personal savings, and/or

(ii) corporate retentions (i.e. business savings).

The implication is that, by definition, a part of the observed corporate retentions in every specific period t, is this part of the 'controlling group's' income that this group has decided to save within the corporation: i.e. simply a form of the controlling group's savings. The other part of

retentions, however, represents the savings within the corporation that the 'controlling group' has decided to make for the rest of non-controlling shareholders, and it does not necessarily reflect their choice. This important phenomenon arises from the fact that 'capitalists' own a proportion only of shares, but control all corporate income.

The implication of the above is that regarding the 'controlling group', actuality is just the realization of their past decisions. Or, in terms of the substitutability issue, the perfect substitution hypothesis is true by definition. See also Sugden (1981). This is independent of whether capitalists exhibit a preference for corporate retentions or not. Savings may be mostly done in the form of personal savings rather than corporate retentions and this will have no effect on the posited perfect substitution between the two. Alternatively, if capitalists do exhibit a preference for retentions, in the limit we may have a situation where all their savings are made within the firms, and personal savings do not exist on their part, but only for transaction purposes and/or in a 'disequilibrium' form, due say to the change in their income. Again the perfect substitution hypothesis will be true. The crux of the matter is that, the part of their income that capitalists save within the corporation, is the part of their income that they have decided not to consume and/or save in the form of personal savings.

We conclude, that corporate decisions, far from being a constraint on the'controlling group's'preferences are only a reflection of these preferences. For this group, the neoclassical proposition that corporate decisions are a reflection of individuals' preferences, is correct. Not surprisingly either;[10/] since it is this group that control the corporations. The problem with the neoclassical analysis arises from the fact that capitalists do not control only the income they own, but other people's

income too. The behaviour of the non-controlling households, however, may be different: an issue to which we now turn.

Generally speaking, non-controlling groups comprise the vast majority of people: that is, people of the lower middle and middle classes such as small shopkeepers and other self employed, as well as wage earners.[11/] To the extent that such people do not own shares, the corporate 'controlling group's 'policies on retentions have no direct impact on their consumption-saving patterns.[12/] If they do own shares, however, corporate retention policies may, or may not, be desirable on their part. To facilitate the exposition, we assume that the latter is the case, and relegate our reasons for that in the last section of this Chapter.

Let us then assume that in a certain period t, the retention ratio is set to a higher level than the one desired on the part of small scale shareholders. As a result the latter find themselves with a total level of savings higher than the one they would have chosen, if they had made the decision with regard to the retention ratio. How do they react ? Assuming they have sufficient personal savings and/or they are able and/ or willing to exhaust their possibilities with regard to borrowing, they can either reduce their personal savings by a sufficient amount, or borrow in order to reach their desired level of consumption.

A third course of action often believed to be open to small scale shareholders, is to attempt to 'declare their own dividends' by selling (part of) their shares and thus realising the cash they need to restore their desired consumption levels. If any (combination) of the above options is available to, and is used by, the non-controlling shareholders, then the perfect substitution hypothesis will be correct. Although the specific retention ratio will not reflect all shareholders preferences, the aggregate

(private) saving ratio will. This outcome, however, is based on the extent to which the above possibilities exist and can be realized. In practice it is not obvious that they can.

To start with,a non zero equilibrium level of personal saving may not exist at all on the part of the non-controlling shareholders. This proposition is well in accord with the existing empirical evidence, (see Section 3 of this Chapter and Chapters 6 and 7), and it is plausible to suggest it on theoretical grounds, (see Section 4 of this Chapter), too. This leaves the possibility of borrowing. The latter, however, is never costless. It involves interest and often other payments, and perhaps 'psychic' costs to the borrower(s). Further, borrowing may not be available in some cases, or for some individuals, depending on the extent of imperfection of the capital market(s) and/or the creditworthiness of the borrower. See also,Tobin,(1980).

The above considerations leave us with the possibility that shareholders will be able to declare their own dividends. The following reasons make such a possibility improbable. First, transaction costs involved in selling shares: in case of small lots, these costs may be very important thus rendering the above strategy too expensive. Second, tax disadvantages. Income realized from selling shares will be taxed to a higher rate than retained income. Third, the uncertainty and volatility of the share markets. Shareholders will have to bear substantial costs, in case they are obliged to sell when the market is low.[13/]

Perhaps, more important is the 'information effect' of dividends, emphasised by Wood (1975). The ex-ante decision of small shareholders to buy shares depends partly on the pay-out ratio that a specific firm has at the time of the purchase. Thus, shareholders have some expectations

that this pay-out ratio will not vary substantially in the future, and so, they tend not to react, but only when substantial variation in the dividend payments are observed. In the latter case shareholders wish to sell their shares. A cut, however, in dividends tend to decrease share prices, thus making it a bad time to sell. Thus, the information effects of dividends make it particularly costly to the shareholders to react to the'controlling group's'decisions, by declaring their own dividends.

The above tend to result in the so-called 'clientele' phenomenon, a situation where :

> "not only do particular shareholders favour particular companies at a moment of time, but they persist in their favours over considerable periods sticking to particular shares through thick and thin". (Wood, 1975, p. 37).14/

On balance the above considerations would suggest that increases in the retention ratio, will not be expected to be followed by decreases in personal savings, borrowing and/or selling of shares, on the part of the non-controlling shareholders: implying less than perfect substitutability between retentions and personal savings for this group. Coupled with our analysis of the controllling shareholders' behaviour, the above suggest imperfect substitution on aggregate, its degree depending upon: the proportion of shares held by the controlling shareholders to total share-holding: and the extent to which non-controlling shareholders (attempt to) substitute, by decreasing their personal savings, borrowing and/or trying to declare their own dividends.

We conclude that, the neoclassical idea that the location of control on firms, is not a binding constraint to individuals' choices, is correct

only for those who exercise this control - i.e. the 'controlling group'. It is incorrect for non controlling groups (small shareholders). Regarding these groups, Marglin's and managerialists' analyses, appear to be closer to reality. All three approaches, however, are wrong in attempting to generalize their conclusions for all societal groups. Our analysis results in a similar implication to managerialists but from a totally different route: i.e. by pointing out the limitations of each approach and then integrating the implications of the two.

In the next Section we pursue a similar analysis for the case of pension funds.

2. CORPORATE FINANCE, SOCIAL CHOICE AND FINANCIAL CAPITAL ACCUMULATION : THE CASE OF PENSION FUNDS

2.1 Economic Aspects of Pension Funds

The introduction of corporate pension funds schemes represents the second major step in the process of the socialization of the 'ownership' of the means of production. The introduction and growth of these schemes has, through the intermediation of the financial institutions, resulted in a situation where a significant part of equity capital in the U.S. and the U.K. is 'owned' by wage earners: in the form of shares that the financial institutions buy for them. It is therefore least surprising that in recent years research on the economic role of corporate pension funds has proliferated. In a prophetic article Garvy (1950) anticipated things to come, but it was the meteoric growth of the funds in the last fifteen years that triggered economists' interest. In the U.K. participation in corporate pension funds schemes was rising steadily after the second world war, reaching its peak in 1967 with around half of the work-

force belonging to such schemes.[15] See Green,(1982).

The halt in the rise of the participation rate did not stop contributions to the funds from growing. The net inflow[16] in Life Assurance and Pension Funds(TLAPF) rose from 4.87% of personal sector disposable income (PSDI) in 1967 to 7.47% in 1981, with its peak in 1979 when it reached just over 7.50% of PSDI.[17] In the late 1970's corporate pension funds owned 1/5 of equity of all ordinary shares in the U.K. See Minns,(1982).[18] In the U.S. the relevant figure was higher. See Drucker,(1976).

Two closely related aspects of the pension funds growth received the lion's share of economists' interest: first the issue of whether pension funds can generate a higher level of private saving than could be possible in their absence: second, the implications of the ownership and control of the funds on capital markets, real investment and the institutions of the macroeconomy.

Drucker (1976) in the U.S. paid particular emphasis to the last question. He observed that in the mid 1970's workers in the U.S. owned more than 25% of business equity through their pension funds. Adding the ownership of self employed, public employees and school and college teachers' funds, the figure went up to more than 1/3 of equity capital. Considering this more than enough for control of the means of production, Drucker concluded that an 'unseen revolution' transformed the U.S. to the first truly socialist country. This was the pension funds revolution whose agent was ... General Motors ! (p. 5.)

Not everybody would go as far as Drucker. In the U.K. for example Minns (1981) concentrated on the control rather than the ownership of the funds: his substantive finding being that just over 2/3 of the funds are

in fact controlled by banks and other financial institutions.[19] Such control might have had a distorting impact on capital markets[20], see Rose,(1983) and adverse effects on real investment.[21] See Minns,(1982). Still, Drucker's views help emphasise the far reaching implications of the pensions funds question.

What reasons underly the growth of the funds ? One suggestion is tax advantages, see e.g. Feldstein,(1978). Indeed both in the U.K. and the U.S. pension funds income is treated favourably by the tax authorities. See Threadgold,(1978) and Rose,(1983) for the U.K. and Feldstein,(1978) for the U.S.. Still one could question the direction of causality in the above reasoning.[22]

A second argument refers to a 'labour turnover' or a 'loyalty-control of the workforce' effect. For the former effect employers are taken to incur information, training and other costs as a result of early leaving, which they can reduce simply by discouraging early leavers. This can be effected if vesting[23] and leaving conditions are such that leaving before retirement implies a loss of pension rights. Less than full transferability[24] and incomplete preservation of pension rights may result in a 'loyalty-control of the workforce' effect, see Green,(1982), which can be further accentuated as 'final salary schemes' spread.[25]

It is necessary for the above argument to hold that participation in the schemes is compulsory (i.e. a condition of employment) and strong disincentives to early leavers exist. Further, that employers have played a very significant role in the introduction of the schemes. Green (1982) has arguments for both.[26] Still it is not clear whether the above conditions are sufficient too. Rose (1983) questioned the relative advantages of incomplete vesting and final salary schemes in reducing

labour mobility and inducing workforce loyalty, in comparison to potential alternatives. For Drucker (1976) and Minns (1981) it was both the employers and employees that initiated the introduction of the schemes. Further, the compulsory membership in the schemes is not inconsistent with the third reason advanced for the growth of the funds: the 'saving instrument' effect.

In this argument pension funds, being deferred wages, result in a part of the workforce's 'life cycle' income being saved before it actually gets in to the wage earners' hands. This reduces the obvious 'risk' of this income being consumed rather than saved. Further, it may have the beneficial - for the company sector - effect of putting part of company finance outside the banking system. See Rose, (1983). To the extent that such policies result in a higher level of saving on the part of the wage earners than they would have otherwise chosen to have, we are faced with a 'forced saving' effect, see Feldstein, (1978), similar to the case of corporate retentions.

The 'forced saving' argument and its underlying implications of constrained households choice, see e.g. Rose (1983), are closely related to the other important aspect of the pension funds' growth: its impact on other savings. Before looking at that, we briefly refer to some other economic aspects of the pension funds growth of some interest, from which our analysis will be aided or for which it will have some observations and/or implications. First, their effects on the 'propensity to save' and the 'paradox of saving', see e.g. Pearce and Thomas, (1981), and Cuthberston, (1983). Second, their impact on inducing early retirement, see Zabalza et. al. (1978) and Munnell, (1976).

The first two issues basically refer to measurement and definitional

problems of the offical statistics, but their implications are far reaching since they cast doubts on long existing or strongly believed economic dogmas.[27] The induced retirement issue is very closely related to the substitutability issue, and it is not obvious that they can be examined separately at all,[28] see e.g. Rose, (1983). Perhaps this interconnection is one of the reasons why the substitution issue has been tested so extensively. Another reason may be the multiplicity of factors affecting the analysis of pension funds. This makes it virtually impossible to obtain a conclusive answer for our queries without resorting to econometric estimation. This we do in Chapter 6. In the next Section we analyze the substitution issue.

2.2 Corporate Pension Funds and Social Choice : Substitution or Add-on ?

As already suggested, contrary to the case of corporate retentions, the question of the impact of corporate pension funds on social choice and financial capital accumulation has not been examined theoretically on the part of managerialists and/or radical writers. Instead, a host of empirical studies appeared that attempted to test the neoclassical hypothesis. In its simplest version the latter is associated in particular with the Life Cycle Hypothesis of Ando and Modigliani (1963) and suggests that substitution will be perfect. However, the complexity of factors that affect pension funds makes it difficult to accept such a simplistic view, even to the most prominent neoclassicals. Feldstein (1978), for example, finds that the conditions which should be satisfied in order that this hypothesis is true, are rather extreme.[29]

In general the degree of substitution would seem to depend on two basic factors: the extent to which wage earners are aware of, and want to substitute for increases in pension funds by decreasing personal

voluntary savings and/or by borrowing: and the extent to which they can. In practice, it seems doubtful that any of these conditions will be satisfied. If pension funds provide annuities on more favourable terms than wage earners could buy themselves, pension funds might tend to reduce voluntary savings.[30/] The awareness of their pension funds rights by wage earners, however, may be incomplete or tend to be underestimated due to uncertainty and illiquidity of pension funds equity. In such a case a low valuation will be put on pensions funds rights and wage earners will end up with a higher level of total assets than desired.[31/]

Even with full knowledge on the part of the wage earners, it is not obvious that they will be willing to substitute for different types of savings. An alternative could be to choose earlier retirement. This could explain non-substitution in an extended Life Cycle framework (but see note 28). Assuming that wage earners have perfect knowledge and want to substitute, it does not follow that they can. This, Feldstein (1978) observes, is particularly true for employees with low earnings whose public social security programs provide them with what they might consider as sufficient retirement income.[32/]

> "Since these individuals would generally find it impossible to borrow against future pension benefits, they are forced to accumulate more for their retirement than they would otherwise prefer". (Feldstein, 1978, p. 282).

Further the 'forced saving' effect, Feldstein argues, is the only one whose impact on total asset accumulation is unambiguously positive.

The previous discussion accounts for two deficiencies of the simple Life Cycle framework over which recent concern has been raised. See particularly, King, (1984). That is, imperfect capital markets and the

possibility of some individuals' behaviour being closer to the requirements of the Life Cycle model than of others. See also the previous Section. As regards the latter it may be fruitful to further extend the (implied from the previous discussion but never explicitly spelled out) distinction between employees and employers' behaviour, and analyze its implications for the substitution issue.

In general, employers will be expected to better conform to the requirements of the simple Life Cycle model: i.e. be better informed and face less binding constraints in the capital markets, at least as far as substitution for pension funds increases is concerned. Thus, non-substitution on their part will, as a rule, only be expected if it is so desired on their part. Two reasons suggest that employers would not desire substitution. First, pension funds are in principle 'deferred wages' and not employers' savings, i.e. by definition they cannot act as 'forced savings' in their case. Second, even if employers tend to regard pension funds as their saving and consider their level excessive, microeconomic theory would suggest that substitution should be expected between pension funds on the one hand and corporate retained earnings on the other,[33/] rather than between pension funds and employers' voluntary savings. The above reasoning may be fruitful in the face of some apparently perverse empirical findings of no substitution on the part of employers. See below .

With employers not being willing, and low level employees not being able to substitute, the use of aggregate data would be expected to provide support for the add-on or independence hypothesis, (the idea that pension funds will add-on, on a one to one basis, to other personal saving): or some imperfect substitutability reflecting basically the behaviour of highly paid white collar workers whose voluntary personal savings and/or

access to borrowing may be such as to allow them to substitute, if they want to. The possibility of some substitution between corporate pension funds and corporate retained earnings could not be excluded either. See also Garvy, (1950) but Murray, (1968).

3. THE EXISTING EMPIRICAL EVIDENCE

The conclusion from the analysis of Sections 1 and 2 of this Chapter, is that for both corporate retentions and corporate pension funds less than perfect substitution should be expected in aggregate between each of them, on the one hand, and personal savings on the other: implying the possibility on the part of the 'controlling group' of the firms to influence financial capital accumulation via their decisions on the retention ratio and the ratio of the benefits paid to wage earners from the pension funds to the aggregate pension funds income: i.e. total contributions to the funds.

In general there are two types of evidence that can be used to test the above proposition. First, indirect evidence, such as trying to assess and/or show that non-controlling shareholders and wage earners do not save, by and large, and that they are wholly or partly constrained in borrowing. Also, for the case of retentions, that non-controlling shareholders do not find it preferable to attempt to declare their own dividends. Second, direct evidence, that is the undertaking of direct econometric testing of the alternative hypotheses.

In the first category the existing empirical evidence is minimal: partly because of the complexity of the issues involved. In particular, Marglin (1975), attempted to support his views on the independence between corporate retentions and personal savings, by testing for a short run

propensity to consume net personal disposable income equal to one: i.e. zero equilibrium saving on the part of all households. He used U.S. time series data and defined household disposable income to exclude contractual savings: corporate retentions and pension funds. He found support for his hypothesis. For the U.K. a similar exercise has been attempted by Pearce and Thomas (1981). With a definition of personal disposable income similar to Marglin's, they found an aggregate propensity to save very close to zero. Although none of these studies has taken account of different types of incomes, their finding of a zero aggregate propensity to save may be taken to hold true for each type of income recipients too.

From the host of other studies on the propensity to consume and save (different types of) income, a survey of which is given in the fourth Chapter, none is particularly useful since they all use the official definition of personal disposable income, which includes the net inflow to pension funds and thus biases the propensity to save upwards. See Part II for discussion .

The usefulness of the above findings, in our framework, is that they highlight the difficulties associated with the argument that wage earners and small shareholders attempt to achieve substitutability by manipulating their personal savings. They leave open, however, the possibilities of borrowing and, for the case of small shareholders, of declaring their own dividends.

These possibilities received less than adequate attention in the existing literature. More important, however, we think, is the fact that even if a detailed analysis of the above possibilities is undertaken,

and if more evidence was available to support the zero aggregate propensity to save proposition, this would only be indicative of the extent of aggregate substitutability. It would by no means reveal the exact degree of substitutability. The latter can only be revealed if one goes beyond the indirect type of evidence analyzed above, i.e. if one undertakes direct econometric testing of the hypotheses involved.

Such direct evidence involves estimating consumption or saving (personal or private) functions, that include retentions and/or pension funds as explanatory variables. Depending on the obtained coefficient of the relevant variable, support may be obtained for the perfect substitution, the imperfect substitution, or the add-on hypothesis.

Research along these lines has increased dramatically in recent years: motivated by a host of reasons referred to in Chapter 4. For the case of corporate retentions originally no direct support was given to any of the hypotheses. Proponents of the perfect substitution hypothesis have relied on the work of Denison (1958) on the apparent constancy of the private saving ratio in the U.S. economy. The latter's evidence however, has been criticised severely, see Marglin, (1975) and Lambrinides, (1972), so that, the question was left open. Further support for Denison's findings was more recently given by David and Scadding (1974). Deducing, however, 'ultrarationality' and perfect substitution from the apparent constancy of the private saving rate is a non-sequitur, see also Boskin, (1978), and in any case does not constitute direct evidence, for the substitutability issue. Marglin, on the other hand, sought support for his hypothesis in the work of Cagan (1965), on the responses of personal savings to movements in committed savings through households' participation in pension plans. Cagan's findings rejected the substitution hypothesis, but it is not clear that his findings constitute direct evidence of no

substitution in the case of corporate retentions too.[34/]

The first direct attack on the problem was made in an international cross section study by Modigliani (1970), but his tests were inconclusive. Cross section evidence for the add-on was offered by Lambrinides (1972). From the time series studies available, Feldstein (1973) found a high degree - 50% approximately - of substitution. These results contrast with his own findings in a subsequent study (Feldstein, 1978) where a bigger data sample was used and a more complete specification examined. In this study the degree of substitutability falls to an average of around 22%. Similar results to the latter, are given in Lambrinides (1974). Howrey and Hymans (1978) have mixed findings. From five equations reported,one supports perfect substitution, two imperfect substitution and two add-on, depending on the definition of the dependent variable (personal savings) and the data period used. The authors conclude that 'the results are not in conflict with the proposition that business saving is a nearly perfect substitute for personal saving' ! (ibid. p. 683). Bhatia (1979) re-examines Feldstein's (1973) evidence and finds support for the add-on. This supports earlier findings by Burmeister and Taubman (1969) in a different context. Furstenberg (1981) has support for the imperfect substitution hypothesis (of the order of 42 to 45% in eight out of nine cases, and of 67% in one case). The author undertakes the interesting task of estimating personal saving and corporate saving functions and then of a combined run (i.e. a private saving function) which includes all the explanatory variables present in the two previous functions. One would be interested to see the performance of the corporate saving variable in exactly this complete specification. However this variable is (the only one) excluded from the private saving function ! This may render his results doubtful.

More recently, Auerbach (1982) has support for the add-on hypothesis in one case, and for imperfect substitution of 30% in another, depending on the specification adopted. Koskela and Virén (1984) finally, use international cross section data and find support for imperfect substitution: of the order of 35%.

All the above time series studies used U.S. data. For the U.K., there is, to our knowledge, only one published study, by Feldstein and Fane (1973): it has support for the imperfect substitution hypothesis, the substitution being of the order of 25%. This finding is supported by our results in Part II, Chapters 5 and 6.

For the case of pension funds, early work in the U.S. by Cagan (1965) and Katona (1965) gave apparently perverse results. Cagan, found cross section evidence for no substitution and possible complementarity: that is, increased pension funds were resulting in increasing other personal savings too. He attributed this finding to a 'recognition effect': i.e. the view that a (subjectively perceived) 'adequate' retirement income previously out of reach, is now attainable. Garvy (1950) anticipated this idea fifteen years earlier. Cagan's sample was not representative, see Murray,(1968). Katona, however, used a representative sample of households in the continental U.S. and supported the complementarity hypothesis. His explanation was the 'goal gradient' effect, which assumes that effort is intensified the closer is one to one's goal. Munnell (1976) attributed the Cagan-Katona findings to the 'induced retirement' effect. She had U.S. cross-section evidence for the imperfect substitution hypothesis. Canadian cross section evidence by Dicks-Mireaux and King (1983) resulted in similar findings. Schoeplein (1970) examined the effects of pension funds on other retirement saving. He

found evidence of substitution in lower and middle classes but supported the Cagan-Katona findings for higher income classes. Daly (1983) supported the add-on and limited complementarity.

U.K. cross section evidence for the add-on hypothesis was found by Zabalza et. al. (1978). Green (1981) had support for the complementarity hypothesis. Hemming and Harvey (1983) used a more elaborate approximation of the pension funds variable to Green's, and a similar data series. They found support for Green's earlier findings but concluded that the add-on was equally sustainable to the complementarity hypothesis.

On the time series front, Feldstein (1978) estimated private (personal plus corporate) saving functions for the 1929-74 U.S. period. He found perfect substitution. Threadgold (1978) estimated consumption functions with 1963-77 U.K. quarterly data. He found add-on for employers and imperfect substitution for employees. Browning (1982) used a similar series (1962-1979). He found limited substitution between gross pension wealth (i.e. state plus corporate pension wealth) and saving, by use of an extended 'Error Correction' type of the consumption function.[35/]

On balance, and despite some apparent divergence in the findings, the general picture obtained from the above evidence is rarely inconsistent with our theoretical analysis in Section 1 and 2. The perfect substitution hypothesis, in particular, can be rejected fairly conclusively. Obviously, part of the observed differences can be explained in terms of differences in the type of data-data periods used, models and/or specifications adopted, differences in the country under examination, in the choice and/or definition of the dependent variable, and, perhaps surprisingly, differences in the interpretation of the empirical findings. More important is that, most of the above studies are subject to serious limitations which may cast

doubt on their results. These problems are discussed in detail in Part II, Chapter 5 and 6 of this thesis, where fresh evidence free - to the extent possible - from these problems is also provided. For the purposes of this Chapter suffice it to say, that our evidence too, is consistent with limited substitution and/or add-on.

Throughout, the analysis was carried out under the assumption of capitalist control. The fact that we reached the same implication as the managerialists,highlights the idea advanced in Chapter 1, that the existence of an induced flexibility on the private saving ratio through retention and pension funds policies does not necessarily require managerial control. It is at least equally consistent with capitalist control. What is needed is for the 'controlling group' to control more capital than it owns, or alternatively, a joint stock company. These ideas are further explained in the next Section.

4. CAPITALIST CONTROL AND THE ROLE OF THE JOINT STOCK COMPANY IN FINANCIAL CAPITAL ACCUMULATION

We suggested that the ability of corporate leaders to influence financial capital accumulation by exhibiting a preference for a higher retention ratio and the net inflow in pension funds ratio, than the rest of the shareholders - wage earners, can be explained in terms of capitalist control of today's giant corporations. To establish this proposition what is required is to justify such a difference in preferences. Further, if such a difference exists and small scale shareholders and/or wage earners fail to achieve perfect substitution ex-post, the question should be asked why do they buy shares and/or participate in corporate pension funds schemes at all. Finally, what - if anything - explains the observed zero propensity to save on the part of the non-controlling households ?

The differential preference for retentions and pension funds between capitalists and non-controlling groups can be explained in terms of the contradiction between capitalists' motive to accumulate - produce, on the one hand, and their need to realize their profits by selling the new products, on the other.

Regarding the motive to accumulate, we saw in Section 1, that Baran and Sweezy, effectively assumed an 'urge' to accumulate on the part of capitalists. A comprehensive analysis of the various explanations given for this 'urge' under conditions of competitive capitalism is given in Lambrinides (1973). Whether the Marxian imperative to accumulate, that is competition, should be abandoned, modified and/or substituted by another, as a result of the transition to the monopolistic stage of capitalism, is a question that gave rise to interesting discussions.

Thus, Mandel (1967) for example, suggested that both under monopoly capitalism and competitive capitalism, two fundamental forces can explain capital accumulation: the competition between capitalists, on the one hand, and workers on the other, in order to increase the rate of surplus value: and inter-capitalist differences, in order to appropriate a higher share of surplus value. For Cowling (1982) on the other hand, monopoly removes the requirement to accumulate, only in an individual sense, i.e. for the individual capitalist. Given, however, the tendency to monopolization, in the global sense, the need to accumulate in order to realize profits is maintained, or even enhanced. In this sense, accumulation is also required in the long run, in order to sustain the system.

The above also help us to answer our previous queries. Inter-capitalist differences, for example, can explain the preference for

internal finance on the part of industrial capitalists. This explanation is consistent with Hilferding (1981) and Kalecki (1971).

For Hilferding there were two important changes that the joint stock company introduced to the system: the ability on the part of the 'controlling group' of the firms to administrate other people's income, i.e. the shareholders' income; which they do by giving away part of their ownership - i.e. sell shares - while retaining control: and the access this control gives to external borrowing, from banks. We see from the last mentioned reason, a rationale for the preference of a high retention ratio. Indeed, as already noticed, this was the explanation that Kalecki advanced, and justified in terms of a posited risk avoidance on the part of the 'controlling group', as regards external borrowing.[36/]

That the preference for internal finance entails a preference for a high retention ratio seems undisputable.[37/] That this preference should be higher than the one of other societal groups is however less clear. This can be explained in terms of the need for realization.

The problem that the joint stock company solved in its early phase was the need for more finance on the part of capitalists, either without turning to banks for this finance or by doing so but from a better position, therefore with better terms. Expansion, however, requires the need to sell the previously produced goods. With growing incomes of the wage earners and small shareholders, the further the gap between the physical level of subsistence and actual income opens, the more it is possible for people to save in shareholding and/or in banks, and the more aggregate finance becomes available. Further expansion, however, requires again the sale of the new goods. The need to bolster effective demand gives rise to advertising and other selling-promotion activities

of the firms: new 'needs' are created and the socially defined subsistence level tends to diverge significantly from the physical one. An advertising induced, see e.g. Cowling,(1981), 'demonstration effect', see Duesenberry,(1967) ensures that consumption will tend to catch up with net disposable income. See Part II .

The above analysis is consistent with the Galbraith-Marglin emphasis on our 'consuming society' and justifies both their view on zero household personal saving and the preference of the non-controlling shareholders for high pay-out ratios.[38/] Inter-capitalist differences can also explain the question of why small shareholders buy shares at all, an issue apparently unexplained in the managerialist literature. That is, in their attempt to attract other people's money - i.e. sell shares, capitalists will tend to provide some incentives. One may be the paying of a dividend just higher than the prevailing rate of interest. See Hilferding,(1981),Ch. 7. Another may be by trying to obtain a preferential tax treatment of retained earnings on the part of the State.[39/] Provided the appropriate links exist between corporate leaders and State officials this can always be a possibility. As we have seen a preferential tax treatment for retained earnings today exists in most advanced capitalist countries. In our analysis the new element is that causality runs from capitalists' preference for a high retention ratio to a preferential tax treatment of retentions, than the other way around.

In the light of the above, the non-controlling shareholders' behaviour is consistent with the following scenario. Ex-ante, they buy shares because industrial capitalists offer to them a better 'investment' of their money than financial capitalists, e.g. banks. Shareholding, that is, represents to them the best of the two worlds available. Ex-post,

they fail to realize their preferred retention ratio level, itself induced partly by the advertising policies of the firms, for the reasons analyzed in Section 2.

Important, we think, in the above, is the idea that tax advantages can help explain only the non-controlling shareholders' behaviour, but by no means capitalists behaviour too - as managerialists but also Baran and Sweezy suggest - which can best be explained in terms of less superfluous factors, such as the motive to accumulate and the risk avoidance induced preference for internal finance.

An advertising induced high preference for consumption, however, may tend to depress the proportion of shares held by the household sector: which undermines the sources of further finance for expansion. Indeed, in recent years the tendency of personal sector holdings to fall, has already manifested itself. See note 20.

In the light of the above, the introduction of the second stage in the socialization of the'ownership'of the means of production: i.e. corporate pensions funds, appears as the easy way out of the problem. The retention within the corporation of a part of the wage earners income, is used through the intermediation of the financial institutions, see e.g. Minns,(1982) for the buying of corporate shares. Thus wage earners money is used in order to maintain or enhance the aggregate amount of finance available for expansion: but with a difference. While originally the buying of shares was at least in an ex-ante sense voluntary, participation in pension funds is compulsory. Where the system fails to persuade, hierarchical control takes over.[40/]

The pension funds revolution appears to be the completion of the process of the socialization of the 'ownership' of the means of production, as it renders 'owners' virtually all members of the society. Appropriation, however, remains private. The potential problems of that to the system are analyzed in Chapter 3.

Regarding the managerialist revolution we can state, in the light of the above, that it was not managers who saved capitalism, but rather capitalists, who by means of the joint stock company managed not only to retain a 'reasonably high' level of accumulation but also to become able to increase it almost at will.

SUMMARY

We have analyzed the link between corporate control, social choice and financial capital accumulation. We advanced the simple idea that corporate decisions do not constrain the possibilities of choice of those who take the decisions - the corporations' 'controlling group'. However, they do constrain non-controlling groups' choices. Thus the level of financial capital accumulation depends on the decisions of the 'controlling group' on retentions and pension funds, subject to the lack of perfect substitution between retentions and small shareholders' personal savings, and pension funds and wage earners' personal savings, respectively. Under present day conditions the idea that substitutability - if any - will be less than perfect, is more than probable: this is supported by all existing evidence. The 'controlling group's 'preference for high retention ratios may be explained in terms of risks associated with, and more access to, external borrowing and also, in terms of their attempts to solve the emerging contradiction between their needs for finance and the all-income-

consuming households. It would appear that the joint stock company furthered the possibilities of achieving high levels of capital accumulation, not only by passing to the 'controlling group' other people's savings, but also by allowing it to increase the level of savings other would otherwise have chosen to do.

NOTES

1/ These should be viewed flexibly though, since the boundaries are often vague, as the analysis to follow will reveal.

2/ The ratio of retained earnings to total profits.

3/ The ratio of private (personal plus corporate) savings, to private income.

4/ Incidentally, this 'rather simple model' introduced for the first time in the consumption function what came later to be termed the 'error correction mechanism'; used in the well known Davidson et. al. (1978) model of the consumption function. See also Hendry and von UngernSternberg (1980), and Davidson (1983).

5/ We use this term to denote the widespread acceptance that the managerialist ideas have gained: perhaps the most prominent manifestation of that being the form of saving function. See Chapter 4.

6/ That is the idea that managers do control firms: for Baran and Sweezy (1967) in particular, managers are the "leading echelon" of the capitalist class; an idea which has (wrongly to us) resulted in the term "Marxist-managerialists" as descriptive of the ideas advanced in particular by Sweezy and O'Connor. See e.g. Fitch,(1972).

7/ Obviously asymmetry in choice is to be found in the managerialist and the Marglinian views too. The particular feature of our approach is the asymmetry in (groups of) individuals' choices and not corporations (or their managers) on the one hand, and all other (groups of) individuals on the other.

8/ E.g. when constraints imposed on the 'controlling group' from the market valuation of shares and the associated risk of take-over raids, become binding.

9/ It is obvious that not every single capitalist will exhibit the same degree of preference for the level of retention ratio, to other capitalists. The following behaviour should be expected in such a case. Those who find the retention ratio 'excessive' will try to compensate for it by reducing their personal savings - if any - and/or by borrowing. Those who find it smaller than desired will attempt to buy either other firms' shares and/or they will put their, thus resulting, 'excessive income' in the form of personal savings.

10/ The idea is consistent with the Marxist political analysis of capitalist democracies, that is the idea that such democracies are indeed democratic to capitalists but essentially dictatorial to other societal classes - wage earners in particular.

11/ This does not imply that these groups have no say whatever to the running of the firms. See e.g. Baran and Sweezy,(1967) and Wood, (1975). It just means that any constraints they put on the corporate leaders act through the latter's behaviour-actions. That is, their impact is exhausted in the observed retention ratio, etc.

12/ Obviously in the long run increased retentions invested in new capital outlets will increase their income (assuming constant distribution of income). This, however, does not affect directly our analysis.

13/ What shareholders can obviously do, is to choose not to add to their holdings, as their income grows. This does not bear on our analysis on short run substitutability, but it may affect adversely the extent of personal sector shareholding. As explained later in this Chapter, institutional shareholding, through e.g. the introduction of compulsory pension funds schemes may be the answer to this problem. See Section 4.

14/ Note, that this also results in the small shareholders' favour to high pay-out ratios: which neatly complements our analysis in Section 4.

15/ As compared to ⅛ in the mid thirties.

16/ Defined as Employers plus Employees contributions to the funds plus rent, interest and dividends earned by the funds minus their administrative costs and the benefits paid to the house-holds.

17/ The relevant figures as a proportion of Net Personal Disposable Income (NPDI) i.e. PSDI minus contributions to, plus benefits from, TLAPF, were 5.13%, 8.07% and 8.14% for 1967, 1981 and 1979 respectively.

18/ This rises to 38% if insurance companies holdings are added.

19/ As noted in Chapter 1, this fact does not contradict our arguments in there, and in no case implies managerial control.

20/ In particular the growth of the funds is held responsible for the increase of the institutional shareholding of U.K. listed securities, from 21% in 1959 to 50% in 1978: during which period personal sector holdings fell from 66% to 32%.

21/ An argument based on the international character of the London City and its 'relative autonomy' from production at home, for its share in profits: which results in a short term view of investment. See Chapter 3.

22/ If e.g. the 'saving instrument' (see below) is the underlying reason for the growth of the funds in a parliamentary western democracy one might observe tax concessions arising, as corporate leaders advance such demands to state officials so that their aims are not thwarted by adverse taxation.

23/ The term refers to the idea that a participating employee acquires a 'vested interest' in a pension only after a number of years. S/he cannot until then, draw out the money, borrow against it or assign or sell her/his interest. Full vesting exists only if there is entitlement to full preservation rights on change of employer.

24/ Full transferability exists if an early leaver receives her/his own plus her/his employer's contributions and indexation (i.e. inflation proofing).

25/ That is, when pension benefits are measured as a fraction of the last (number of) year's salary.

26/ In the late 70's the membership in compulsory schemes was 80% for the private sector and nearly 100% for the public sector. For disincentives to early leavers see also Rose (1983).

27/ I.e. that the propensity to save net personal disposable income may not differ from zero. See also Marglin,(1975): that the 'paradoxical' increase in the saving ratio in the 70's becomes even more paradoxical if the discretionary saving ratio (i.e. NPDI minus consumers expenditure divided by NPDI) is considered, in that the rate of increase in the latter case is even higher. See Pearce and Thomas,(1981): and that inflation effects on saving are sensitive to the definition of saving adopted; the impact on inflation on discretionary saving being much smaller than on personal sector saving (PSS). See Cuthbertson,(1983).

28/ Munnell (1976) argued that induced retirement may result in non substitution. Zabalza et. al. (1978) that non-substitution is a prerequisite for induced earlier retirement.

29/ That is, correct employee perception, constant employee total asset accumulation and full funding. I.e. the maintenance on the part of the company of a pension fund which assets equal the present actuarial value of its employees anticipated pension benefits.

30/ Even so, this will only hold true unless the higher rate of return encourages more saving. See Threadgold,(1978).

31/ Feldstein (1978),for example notes that U.S. household surveys have shown that individuals do not know the money value of their future pensions - albeit he considers emphasis on money values misplaced.

32/ For many employees in this category Feldstein observes, 85% or even more of lost income is replaced by such benefits. See also, Murray,(1968). For the U.K. the situation is similar. See Zabalza et. al.,(1978).

33/ Since they both serve the same purpose: i.e. business financing.

34/ Given the multiplicity of factors entering the analysis in the case of pension funds. See e.g. Rose (1983) and Feldstein (1978).

35/ See e.g. Davidson et. al. (1978), but also note 4.

36/ See also Wood (1975) and note 6 of the 'General Overview'.

37/ Aaronovitch (1961) quotes the Chairman of Unilevers to have said, '... we think it most important to have large funds of our own, because we cannot always be certain of being able to raise money on the market when opportunities present themselves'.(p.159). The benefits of retained earnings are also referred to in Aaronovitch and Smith (1981).

38/ See note 14.

39/ Which evidently increases their own potential for saving too: by increasing their total disposable income.

40/ It should be stressed that the state did little to hinder the introduction and growth of the schemes. Rather,by continuously providing a favourable tax environment, it might have facilitated this process. See also Green (1982).

CHAPTER 3

Corporate Financial Capital Accumulation and the Realization of Profits*

* This Chapter relies on, and extends ideas that first appeared in Pitelis (1983c). An earlier version of this paper was presented at the author's thesis proposal at Warwick, and at a Research Students Workshop, at Warwick.

INTRODUCTION

The process of the socialization of the 'ownership' of the means of production and the 'controlling group's' ability to influence via their decisions the aggregate level of financial capital accumulation, may not necessarily have a beneficial impact on the economy as a whole: or even the corporate sector itself !

In particular, we suggest, in this Chapter, it is conceivable that corporate decisions on retentions and pension funds, coupled with the observed inability and/or unwillingness of the non-controlling groups to achieve perfect substitutability, between corporate saving and their personal disposable saving, may tend to result in a situation where an increasingly lower proportion of private income is devoted to the purpose of consumption. Under certain conditions this may generate a tendency for a realization failure: i.e. a situation where potential corporate profits cannot be realized due to insufficient effective demand.

In Section 1 we focus on savings and examine some relevant post-war historical statistics for the U.K. In Section 2 we propose a (version of a) theory of underconsumption based on the analysis-results of the previous Chapters, and relevant assumptions. This is compared with Baran and Sweezy's version of underconsumptionism. In Section 3 finally, we examine two alternative interpretations of, and explanations to, the apparently 'irrational' behaviour of the corporate 'controlling group'.

1. SAVINGS: DEFINITIONS AND HISTORICAL TRENDS

Savings play the crucial role in our analysis. Viewed on the part of the household sector, we may distinguish ex-post between 'contractual' savings and 'discretionary' savings.[1/] The former are defined as savings that are not subject to the direct influence of the households and consist basically of corporate retentions[2/] and pension funds. The latter are the net personal savings of the households.

The above three series are summarised in Table 1, as proportions of private income. The focus is the postwar U.K. A simple inspection of Table 1 reveals that all three series have been rising from the early 50's up to the late 70's. In 1980-1981 there is a reversal of the trend in the case of the corporate retentions ratio, which is also the case for net personal savings in 1981. What is most important, however, is the picture emerging when the sum of the three series, i.e. private savings, is examined, as a proportion of private income: or alternatively, its respective consumption to private income ratio.

As it turns out from Table 1, the latter fell from an average of 80.8% of private income in the 1961-1971 decade, to an average of 74.4% in the 1971-1980 period, and started rising again in 1980-1981 reflecting basically the dramatic fall in the retentions to income ratio, in these two years.

It is evident from Table 1, that despite the rising trend of the net personal savings ratio, the major part of private savings is accounted by 'contractual' (or corporate) savings. The rising tendency of all series on the other hand is in itself suggestive of the possibility that no substitutability exists between the three series: an observation

TABLE 1

% Private Income

	Net Inflow in Life Assurance and Pension Funds	Consumer Expenditure	Net Personal Saving	Corporate Retentions (Gross)
1951	2.65	85.6	-1.37	13.1
2	2.82	85.8	0.20	11.2
3	2.94	85.3	0.46	11.3
4	3.08	85.2	-0.39	12.1
5	3.07	83.8	0.01	13.1
6	3.10	82.8	1.40	12.7
7	3.32	83.2	0.82	12.7
8	3.57	84.2	-0.03	12.2
9	3.70	83.3	0.51	12.5
1960	3.90	81.0	2.35	12.7
1	3.91	80.4	3.75	12.0
2	4.03	81.6	2.56	11.8
3	4.31	80.8	2.25	12.7
4	4.31	80.0	2.70	13.0
5	4.00	78.9	3.65	13.4
6	4.10	81.1	3.96	10.8
7	4.36	82.0	3.11	10.5
8	4.49	82.2	2.02	11.2
9	4.16	81.1	2.70	12.0
1970	4.30	79.6	3.64	12.5
1	4.78	80.4	1.71	13.1
2	5.83	78.2	2.76	13.2
3	5.55	74.4	4.24	15.8
4	5.11	72.3	4.96	17.1
5	5.01	74.6	5.74	14.6
6	5.48	73.6	4.45	16.4
7	5.47	73.4	3.37	17.8
8	5.85	72.6	4.83	16.7
9	6.26	71.2	5.74	16.7
1980	6.37	73.5	7.21	12.9
1	6.54	75.8	5.22	12.4

Source: National Income and Expenditure (Blue Book), 1982.
Central Statistical Office.
Estimations by the author.

well in line with the direct empirical evidence reported in Chapters 2 and 3. This suggests that increases in corporate saving are the major cause for the falling tendency of the consumption to income ratio. Regarding the latter, finally, the figures involved appear to be high enough to raise concern over the impact of such decreases (ceteris paribus) in effective demand, on the aggregate economy: which raises the possibility of a realization failure.

2. CONTRACTUAL SAVINGS AND UNDERCONSUMPTION

2.1 The Institutional Setting

Throughout we will follow Kalecki (1971) and recent contributions by Cowling (1981), Rowthorn (1981) and Sawyer (1982a, 1983) and will assume a monopolistic economy operating well below its full capacity level. This may be taken to characterize most modern advanced capitalist countries: although for our purposes here, the empirical fact that such is the case for the U.K., (see Cowling, 1982), is sufficient. In this framework, firms will respond to changes in effective demand largely by varying the level of their production, while prices will tend to be inflexible.

In this system, the Lerner/Kalecki 'degree of monopoly' and marginal costs, will determine prices:

$$p = \theta(M)\ mc, \quad \text{where}$$

mc = marginal cost, M is a vector of factors that determine the 'degree of monopoly', and θ is the mark-up of price over marginal cost. In price-cost margins form the above equation gives,

$$p - mc/p = \theta M - 1/\theta M \ ,$$

meaning that the margin will depend on the factors entering M. In terms of the 'surplus' (S), i.e. profits plus overheads, the last equation gives,

$$S/pq = \theta M - 1/\theta M.$$

Summing finally over 1,...,N industries we can derive the weighted average degree of monopoly $\bar{M}$, as $\Sigma S/\Sigma pq = S^*/T^*$: i.e. the ratio of gross capitalist income plus salaries (defined as overheads) to aggregate turnover.

Given excess capacity, increases in saving 'propensities' that induce a fall in effective demand, will be followed by reductions in output and as a result capacity utilization and the rate of profit. This in turn, may depress investment[3/] as firms are faced with lower profits and(due to)excess capacity. See Rowthorn, (1981). Increased 'thriftiness' may also affect investment directly, by rendering slim the possibility of realization of potential profits, an issue taken up later.

The assumptions just outlined and the empirical facts of U.K. excess capacity and rising proportions of income saved, basically in the form of 'contractual' savings, are sufficient to provide us with the building blocks of a (version of a) theory of underconsumption. This can be viewed as an extension-alternative to Baran and Sweezy's (1967) version.

2.2 Underconsumption in Baran and Sweezy

Underconsumption has a very long history. Early contributions to

such a theory include thinkers such as Malthus, Sismondi and Hobson. Bleaney (1976) gives a comprehensive survey. A long controversy emerged with regard to whether Marx himself was (would be) an underconsumptionist or not (Sweezy, 1942, Bleaney, 1976), an issue we do not intend to examine though. The theory of underconsumption has experienced a revival in the work of Sweezy (1942). Building on this work and further contributions by Steindl (1952), Baran and Sweezy (1967) have advanced in more recent years, what is arguably the most elaborate up-to-date version of under-consumptionism.

The essence of their theory can, briefly, be given as follows. As capitalism advances, the 'controlling group' will attempt to cut marginal costs. This, assuming an inability on the part of the unions to overcome the power of monopolies, will result in wages lagging behind increases in productivity. Assuming the downwards stickiness of prices (the 'kinked' demand curve), a decline in marginal cost will increase profit margins; what Baran and Sweezy call the 'surplus', see also Baran,(1962). The latter is both actual and potential. Actual surplus includes reported profits of firms plus rent and interest, plus all wasteful expenditure undertaken by firms, such as advertising and other selling expenses. Potential surplus is what could be produced under full capacity - full employment conditions. Monopolistic pricing and historically falling marginal costs will result in the 'rising tendency of the surplus'. Increasing profit margins, however, do not warrant the selling of the products produced - the realization of profits. The surplus can be consumed, invested or wasted. In face of increasing profits, lags of adjustment of dividends to the (otherwise constant) pay-out ratio, will result in a higher proportion of profits being retained, and a lower proportion being distributed. Thus, consumption will tend to be an increasingly lower proportion of the surplus.

Investment, too, will tend to be an increasingly lower proportion of the surplus. Risk averse monopolists will tend to suppress inventions, since it pays them to keep old plants as long as they are still profitable. The only way, therefore, for the surplus to be absorbed is wasteful expenditure by the firms (advertising and other selling expenses) and the government (particularly armaments expenditures). Both, Baran and Sweezy observed, had increased dramatically in the post war U.S. economy. In the absence of such counteracting forces, capitalism would have been led to a profound depression.

Baran and Sweezy's analysis is, we think, an important contribution to the understanding of the workings of advanced capitalist economies. However, it lacks generality in some respects: it may also be questioned in some others too. Their treatment of retentions, for example, is incomplete. The aggregate retention to income ratio can increase, even in the absence of lags of adjustment of dividends, as shareholding is further diluted: since the tendency of the socialization of the 'ownership' of the means of production to increase, brings a higher proportion of private income under the control of the 'controlling group'. This is further facilitated by the introduction and growth of the corporate pension funds schemes: an issue not considered by Baran and Sweezy. Their argument regarding innovations and investment is not generally accepted either[4/], and no emphasis is given to the potential links between consumption and investment.

The above problems refer to the absorbsion of the surplus. Its generation, however, can be questioned too. In terms, for example, of the degree of monopoly the rising tendency of the surplus can only be true if the reduction in marginal costs is accompanied by accommodating shifts in the determinants of the degree of monopoly: i.e. a fall in

the elasticity of demand, and/or a rise in the degree of collusion, and/or a rise in the level of concentration. See Cowling (1982). That such accommodating shifts did occur in the period under consideration, needs to be demonstrated empirically.

With no conclusive answer to these questions the rising tendency of the surplus remains a possibility to be demonstrated; Baran and Sweezy's evidence on this regard, however, appears to be very sensitive to their ad-hoc assumptions (see e.g. Bleaney, 1976, and Mandel, 1967a, for discussion along these lines).

2.3 An Alternative Version

The rising tendency of the surplus is not necessary for an under-consumptionist tendency to operate in advanced capitalist societies. Corporate policies on retentions and pension funds coupled with less than perfect substitution between corporate and net personal saving, may lead to the same result. To illustrate this proposition we make use of the idea of the profits curve (PC) and the realization curve (RC) exposited in Rowthorn (1981).

The profits curve is shown in Figure 1. It shows the amount of net profits created at any level of capacity utilization, by using existing methods of production and with real wages at their current level. The profits curve has a positive slope of $\bar{M}/k$ below full capacity, where k is the capital-output ratio. It is vertical at the full capacity level. It defines a relationship between π and u, where π is the profit rate (profit to fixed capital stock ratio), and u is an index of capacity utilization (the actual to potential output ratio). Given our assumptions only the sloping part of the curve is of consequence here.

The realization curve (RC) shows the net rate of profits exactly realized at any given level of u, without either excess demand or excess supply. The realization curve establishes a linear relationship between π and u. Its slope is positive if u has a positive impact on investment[5] and the aggregate propensity to save (only out of profits in Rowthorn) is greater than the propensity to invest.[6] This case is shown in Figure 2.

The economy always lies on the profit curve: as the latter simply indicates the relation between cost and output at any given level of u. For 'equilibrium' to be attained, however, the economy must also lie on the realization curve. 'Equilibrium' will be stable if displacements along the profit curve generate forces that pull the economy back to its original position. For this to happen, savings must be more sensitive than investment to such displacements. A high propensity to save gives rise to a realization curve with positive slope but less steep than the profits curve.[7] The slope and position of the profits curve is determined by the cost structure of the firms, while saving and investment behaviour determine the slope and position of the realization curve. Increases in investment, consumption and government expenditure will shift the realization curve upwards, and vice versa. Increases in $\bar{M}$, lower taxes, slower depreciation and reductions in the amount of fixed capital or overhead labour required to produce a given level of output, will shift the profits curve upwards, and vice versa.

Given the above, and approximating the 'surplus' with the profits curve, the underconsumptionist tendency in Baran and Sweezy is shown in Figure 3. See Rowthorn, (1981). Our alternative version is shown in Figure 4. It can be seen that our version does not require a rising surplus for an underconsumptionist tendency to operate.[8] Starting

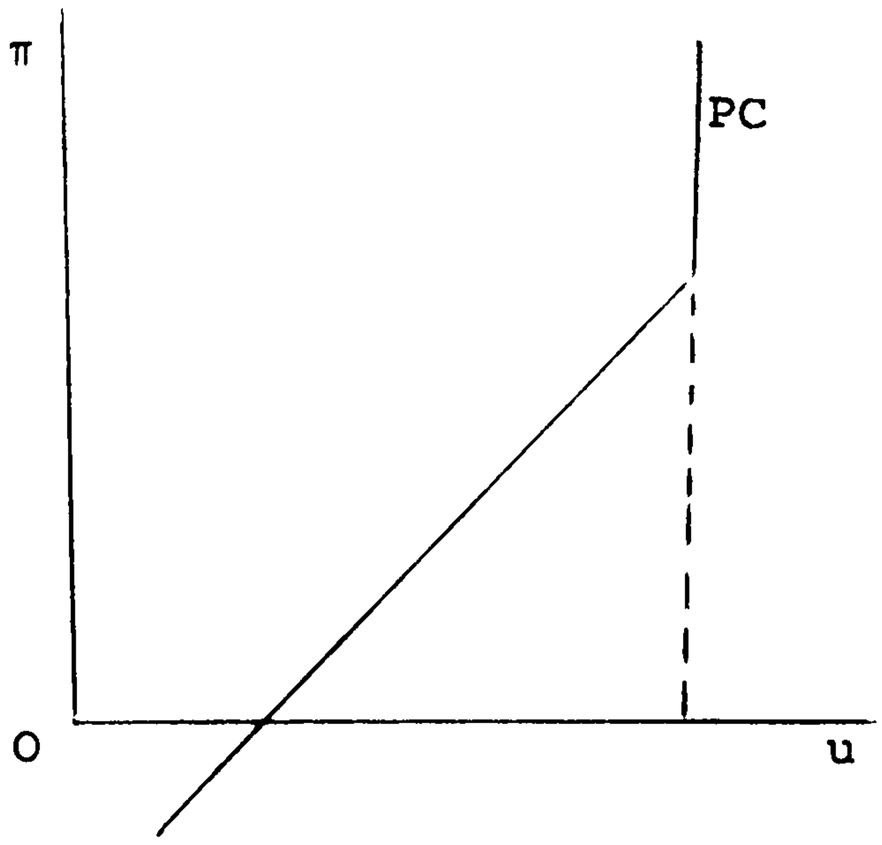

FIGURE 1
The Profits Curve

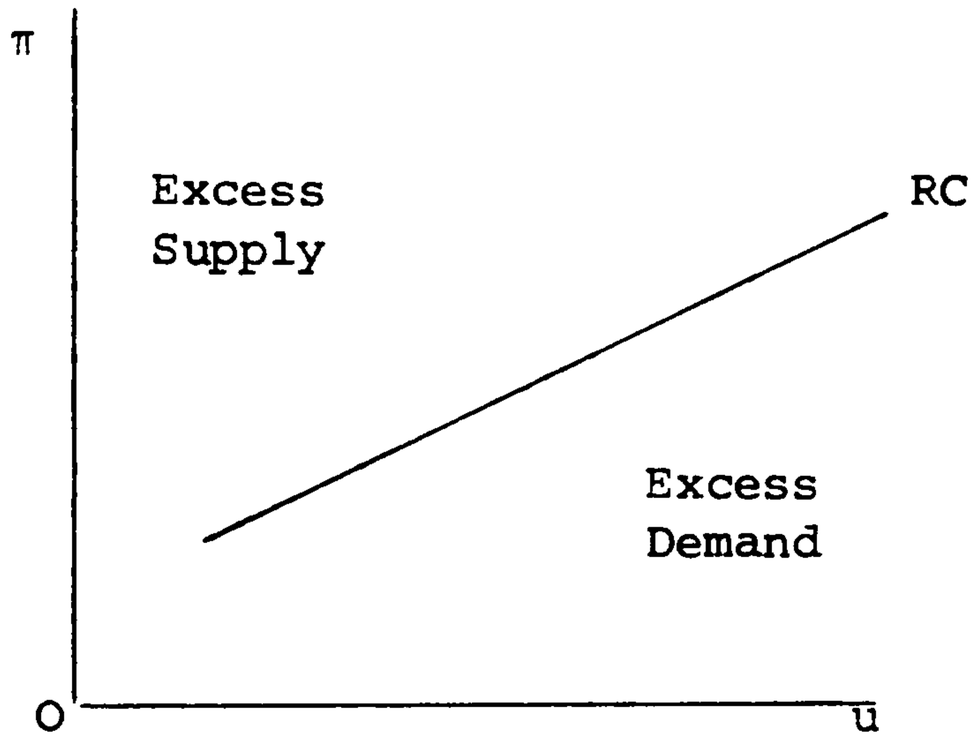

FIGURE 2
The Realization Curve

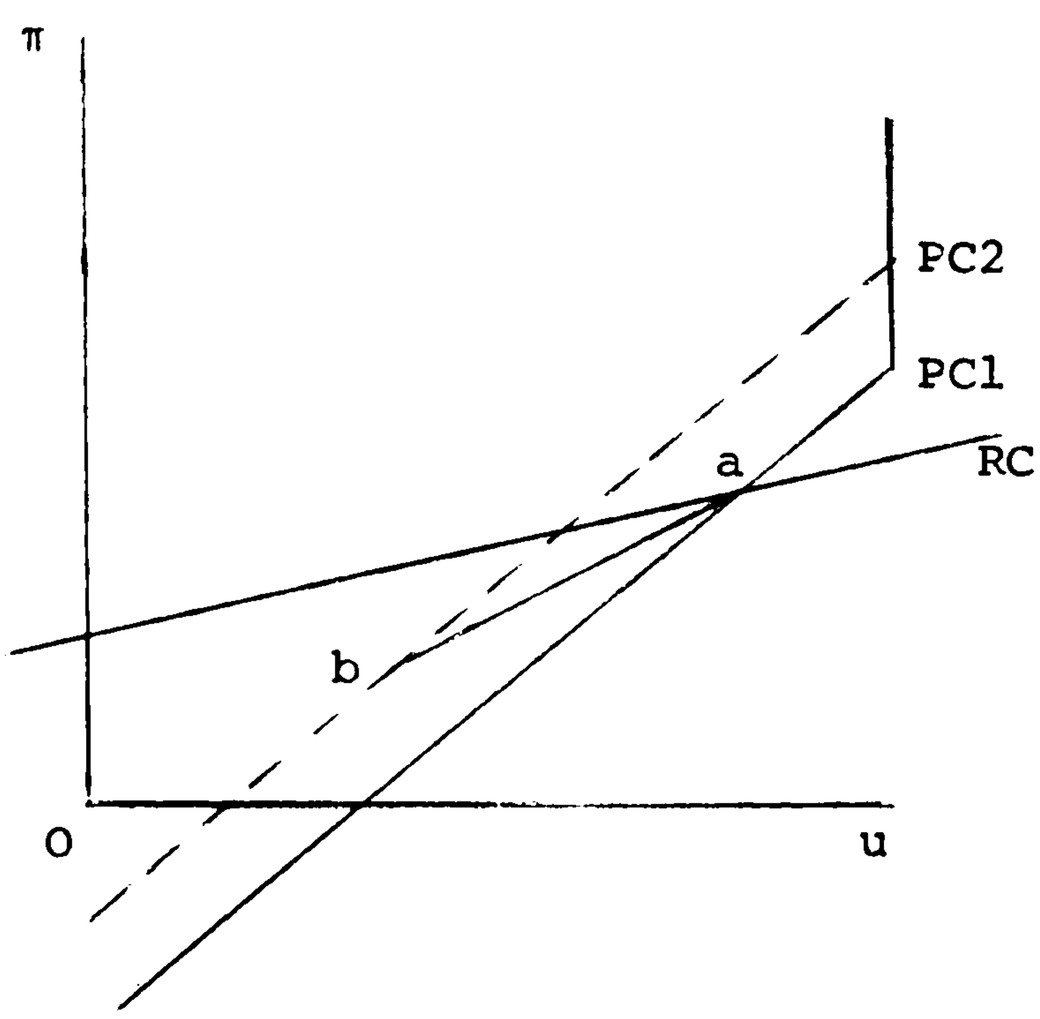

FIGURE 3
Underconsumptionist tendency due to rising 'surplus', with constant realization curve.

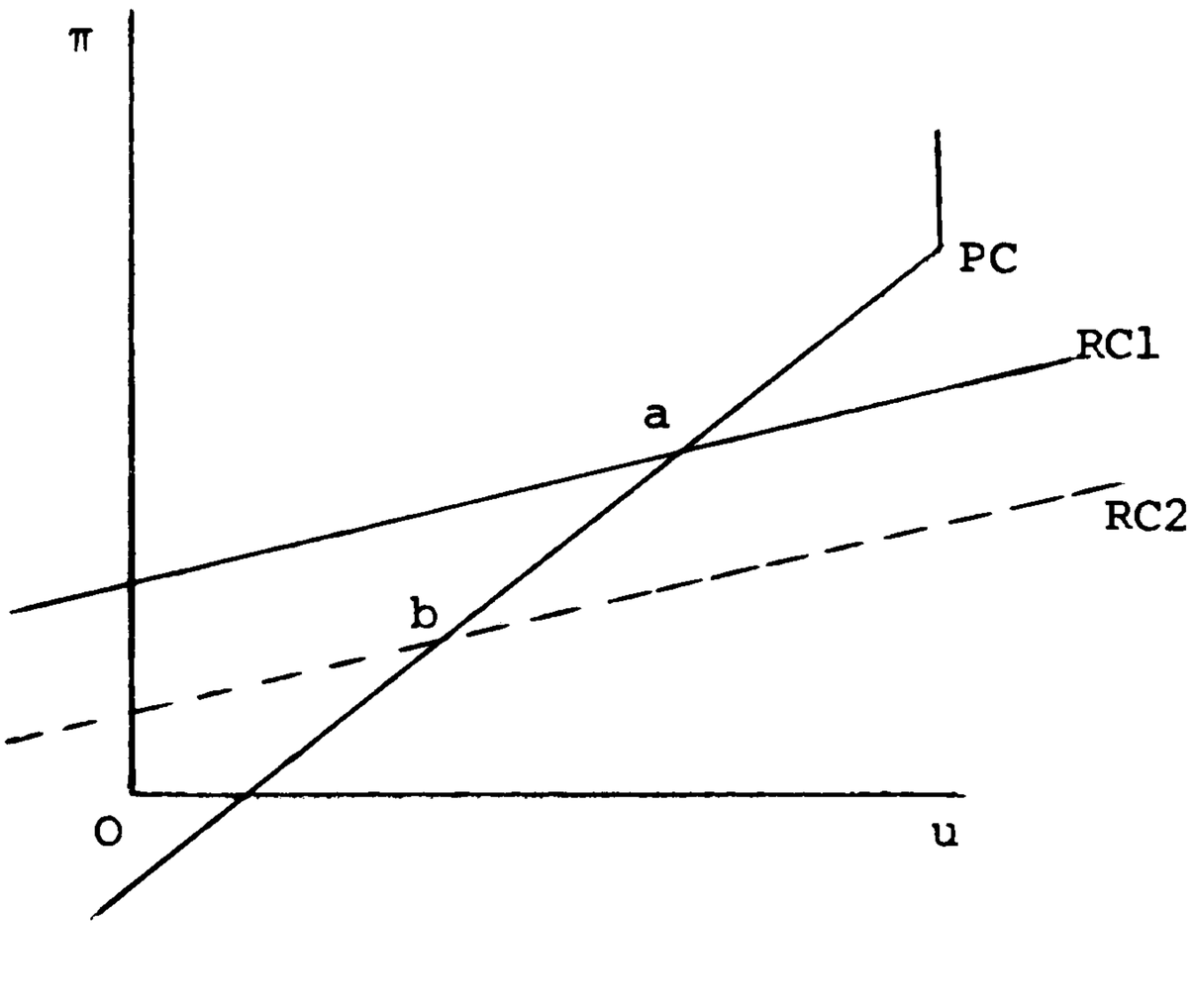

FIGURE 4
Underconsumptionist tendency due to 'excessive savings' with constant 'surplus'.

from the original 'equilibrium' level a, a fall in the realization curve resulting from increased saving, will lead to b: i.e. a lower level of π and u.

It follows from the above that the alternative version we propose here meets the critique regarding the generation of the 'surplus'. A rising 'surplus' can render the deflationary tendency stronger but it is not essential for the argument.

Given our suggested source of the problem, policy measures should obviously be directed towards a reduction of corporate savings. The observed dramatic fall in the private saving to private income ratio in 1980-1981, might, in the light of our analysis, be a sign of an incoming upturn. This however, may be thwarted by adverse policies, such as the recent proposal by the U.K. Conservative government to increase workers contributions to pension funds.

The last observation addresses the more general issue of the offsetting factors which might potentially counteract an underconsumptionist tendency. In our case examined here, the fact that the deflationary tendency has been observed already and been given a 'post festum' explanation, would suggest that if any role is to be attributed to offsetting factors, this should be in terms of attempting to explain why they did not succeed in preventing the underconsumptionist tendency. Evident explanations along these lines may be the non identification of the source of the problem, e.g. by the state authorities and/or the latter's inability and/or unwillingness to solve it, e.g. for fear of enhancing the power of the working classes: a possibility originally emphasized by Kalecki (1971). It could be also suggested that in the absence of offsetting factors, the underconsumptionist tendency would be stronger.

Factors that are usually considered to have a countervailing impact on realization failure problems are: advertising[9/], technological

change[10], exports and state expenditures[11]. Detailed analysis of the role of such factors abound in the relevant literature, see e.g. Baran and Sweezy, (1967), Rowthorn, (1981), and Cowling, (1982), and it will not be repeated here. Suffice it to note that all the above factors rarely operate in a mono-causal, straightforward manner:[12] an observation which, assuming the correctness of our suggestions, is highlighted by their ex-post observed 'failure'.

To summarize, the only crucial requirement upon which our analysis hinges is: an increase in contractual savings that lowers the consumption to private income ratio due to lack of perfect substitution between contractual and discretionary savings. This requirement, as we saw in Section 1 of this Chapter and in Chapter 2, was satisfied in the post war U.K. history, thus accounting, partly at least, for the recent recession, ceteris paribus.

Our alternative version is obviously, of further value, if a link exists between consumption and investment: either direct or indirect through capacity utilisation and the rate of profits. With regard to that, although the direct link idea has been critisized for its naivete, see e.g. Sherman, (1979) and Devine, (1983), to assume an indirect link appears plausible: as many versions of the Investment Function today include the profit rate and/or capacity utilization as explanatory variables. See Sherman (1979), Rowthorn, (1981), Cowling, (1982) and Sawyer, (1982). It should be stressed though, that even if a link does not exist between consumption and investment, this will not adversely affect our analysis. This would only be the case if consumption and investment were inversely related below the full capacity level: a rather implausible hypothesis. See also Rowthorn, (1981).

It should be clear that our analysis does not intend to invalidate Baran and Sweezy's theory; rather it can be seen as complementary to it in the sense that it identifies a different route by which an underconsumptionist tendency could operate. Moreover both versions could operate simultaneously if, say, profit margins increase in depression, i.e. the 'surplus' increases, as a result of increases in the degree of collusion between firms; (see e.g. Cowling, 1983). The real difference instead is to be found in the scope of the two versions.

It is an advantage of the previous analysis that under the assumption-empirical fact,(see note 6),of excess capacity, it has probably been in operation in the time and place under examination: but we require from it no more than that. Neither we intend to present this version as a theory of crisis, nor as a causal mechanism which leads to a crisis. It could be that a realization failure of the type described above is just one of the potential mechanisms by which a crisis manifests itself, along with other mechanisms such as the Rising Organic Composition of Capital and/or the Rising Militancy of Labour, see e.g. Weisskopf, (1979), Glyn and Sutcliffe, (1972), and Botty and Crotty, (1975). Alternatively, realization problems could be linked to other problems such as falling profit rates as described e.g. in Wolff (1978). Unless all these features can be taken into account no pretence, we think, for the theory of crisis may (should) be made. We hope to have contributed towards the identification of one of the missing links.

As we do not regard our version of underconsumptionism as an alternative theory, but rather as a specific alternative version to Baran and Sweezy's, we make no attempt here to examine the similarities and differences of our approach to alternative underconsumption theories. The interested reader is addressed to comprehensive surveys such as in Wright,

(1977), and Shaikh, (1978).

3. IRRATIONALITY, ANARCHY, AND NEO-IMPERIALISM

The question asked in this Section is what can explain the corporate controlling group's policies on retentions and pension funds on the face of prolonged recession. In particular, can collective 'irrationality' explain capitalist behaviour ?

An important aspect in Marx's theory of crisis is the 'anarchy' of the capitalist mode of production, anarchy meaning not

> 'incoherence, but that what is rational for the individual may be irrational for the system as a whole' (Eatwell, 1979, p. 37).

In the framework of the analysis in the previous Sections, the notion of 'anarchy' acquires a very specific meaning. Namely, increased internal finance through retentions and, to a lesser extent for the individual firm, through pension funds, is beneficial for the individual capitalist. See also Chapter 2. For capitalists as a whole, however, the induced deflationary tendencies may have a deleterious impact. Causality in this reasoning runs from capitalist behaviour at home, to domestic realization failure.

An alternative, is to attempt to explain realization failures in the domestic economy, in terms of the international role of capital. In this argument international capital pursues a policy of global cost minimization viewing the whole world as the stage of its operations. Investment is undertaken where and when it is more profitable, with primary considerations being a lower cost of production achieved through

the choice of places characterised with a lower wage rate and/or material costs: but perhaps more importantly, the achievement of a reduction in the militancy of labour and thus an increase in the share of profits at a global level. See, e.g. Cowling, (1984). This largely conscious strategy of transnational capital results in deindustrializing parts of the formerly highly industrialized world, Britain being but one manifestation of these tendencies.

In a sense the above argument is the exact opposite of the 'anarchy' idea: in that it can provide an explanation for underconsumption on the domestic level, in terms of neo-imperialist policies pursued from the internationally oriented capital, at the global level. Transnational capital, that is, needs to finance, somehow, its worldwide operations. The obvious way to do that is by socializing the 'ownership' of the means of production through diluted shareholding and compulsory pension funds schemes. The thus raised capital can then be used for capital's own purposes, with its associated damaging effects on the home economy and needless to say, the very people who provided the capital for expansion: wage earners and small scale shareholders.[13/] The formerly industrialized countries, such as Britain in our example, are the obvious candidates for the raising of finance: as two decades of continuous expansion and growth have ensured its existence.

One potential problem in the neo-imperialism argument is that it concentrates exclusively on differences between international capital, on the one hand, and labour, on the other, thus failing to examine potential intercapitalist differences. A variation of the above argument, however, that emphasises such differences results in basically similar conclusions.

Minns (1981, 1981a, 1982) is a prominent representative of this

line of thought. In a number of articles, Minns has advanced the argument that the concept of 'finance' capital, intended to denote a fusion between industrial and financial capital, is for the case of the U.K. unproven empirically to say the least: it is not theoretically indispensable either. Proponents of the fusion idea for the U.K., see e.g. Aaronovitch, (1961), Thomson, (1977), and Mandel, (1978), base their belief on 'finance' capital, on the idea that financial or banking capital cannot in any real sense of the term, be independent of industrial capital; as it relies on the latter, for the production of surplus value of which a part it shares. This view, however, disregards according to Minns the possibility that the whole of financial capital in a country may be independent from the industrial capital of its own country, as it can rely on profits generated outside its nation base. For the U.K. in particular, the idea that financial capital dominates over industrial capital, is both conceivable and has some evidence to back it up. The international orientation of the City of London, Minns suggests, has resulted in the financial institutions taking a short run view of investment, see also Coakley and Harris, (1982), that explains the failure of British industrial capital to compete internationally, and the relatively poorer performance of the U.K. as a whole during the recent recession. The use and control of other people's money, on the part of the City eventually results in those people being unemployed.

Although Minns' arguments appear convincing, there is an important question we think that is difficult to answer in the framework of his reasoning: why other people's money, in particular pension funds money, have been handed to the financial institutions in the first case ? Pension funds money are <u>originally</u> generated in the firms. It is up to the latter to pass them over to the financial institutions or choose to manage them themselves. Minns' (1981) data suggest that in the U.K.

only one third of the pension funds assets were managed internally by the financial institutions. According to Minns cost considerations is not the reason for that: as the cost differences between external or in-house management appears negligible. Rather, control considerations appear to have been the prime motive for the choice to manage in-house. See Minns (1981, p. 32). But given that, one may find it difficult to explain why in-house management was not chosen by all firms: especially when control of the funds investment was at stake.

Minns' arguments are important in that they put in perspective the very important issue of intercapitalist differences. His arguments however detract little from the implications of the neo-imperialism arguments: in that, quite independently of conflicts between fractions of capital the end result is the same. That is, deflationary tendencies at the domestic level.

The other important aspect of Minns' argument is that it indicates that one cannot disregard the international nature of the capitalist system without a cost. In particular, as he recognizes, carrying his arguments to their logical ends, it is possible to suggest that one particular, or even many, state(s) can withdraw into being 'rentier' capitalists and rely on foreign workers for the production of surplus value. This would question widely held beliefs on the working of the capitalist economy, often based on an analysis at the level of the nation state.

It is not easy to conjecture on the end result of the above tendencies. The possibility of a tendency to a global stagnation, as flexible capital tends to reduce the wage share at the global level, see Cowling (1984), could be an interesting working hypothesis. However,

it is not an easy one to substantiate.

The conclusion of the above discussion is that, given the international nature of modern capitalism, neo-imperialism may provide a better explanation as to the underconsumptionist tendencies of formerly industrialized countries, than either 'irrationality' and/or the 'anarchy' of the capitalist system. Crucial in the above argument is that it inverses the conventional wisdom that causality runs from underconsumption to imperialism to its exact opposite. This, however, should not be taken to imply that the conventional wisdom is necessarily incorrect and/or that both views may not be operative in different circumstances: an issue, however, beyond the scope of this thesis.

SUMMARY

In this Chapter we considered the possibility that the corporate 'controlling group's' policies on retentions and pension funds may result in a situation where potential corporate profits cannot be realized. The post war U.K. experience was found not to contradict this interpretation. Two alternative explanations were advanced to account for the apparently 'irrational' behaviour of the corporate controlling group.

NOTES

1/ As regards, in particular, retentions, the decision to acquire shares, is in an ex-ante sense voluntary. Ex-post, however, (part of) retentions represent contractual saving. See also Chapter 2.

2/ Retained earnings are measured after profits due abroad have been subtracted: i.e. they represent profit retentions 'owned' by domestic shareholders.

3/ This presupposes that increased savings do not reduce interest rates which in turn increase investment, or alternatively that if such a mechanism operates, it has a less strong effect than the one we described. This assumption, we think is plausible: as all existing empirical evidence, see Sawyer (1982) for survey, supports the idea that demand factors are most important in explaining investment; and given that the relation between saving and the interest rate is dubious. See Part II for discussion and evidence.

4/ The original proponent of the argument that innovations and investment are independent, was Steindl (1952): a view that Kalecki (1971), for example, never shared. More recently Steindl (1979) too abandoned this idea.

5/ Cowling (1982) surveys evidence that supports the existence of a lagged response between capacity utilization and investment.

6/ This assumption is supported by the fact that between 1968 and 1978 fixed capital formation in the U.K. was less than undistributed profits for nearly every year. See Pearce and Thomas (1981).

7/ Rowthorn (1981) analyzes the formal conditions under which this will be true.

8/ Indeed the profits curve could be falling and still an under-consumptionist tendency could exist, provided that the fall in the realization curve more than outweighs the fall in the profits curve.

9/ Assumed to increase aggregate consumption either directly or via its effects on the propensity to consume. The evidence on the former effect is rather inconclusive, see e.g. Jacobson and Nicosia, (1981), for a survey, while on the latter the little evidence available supports such an effect. See Sturgess and Wilson (1983) for a survey. Advertising expenditure may also increase effective demand directly: as it can be viewed as a form of investment. See Rothschild (1942).

10/ Technological change may increase investment. See e.g. Kaldor and Mirrlees (1962). Stoneman (1984) has a survey of the existing evidence, which appears to be consistent with this view.

11/ See e.g. Bleaney (1976).

12/ Advertising, for example, may redistribute income to profits, see Pitelis, (1982) and therefore reduce consumption if the 'propensity' to save profit income is higher than that of wage income. A similar effect may operate in the case of technological change. See Stoneman (1984).

13/ In that even if pension funds invested abroad result in a higher rate of return on investment, the ultimate'beneficiaries' are left unemployed at home.

CHAPTER 4

Corporate Saving and the Macroeconomic Distribution of Income : The Saving Function Revisited*

* Some of the ideas expounded in this Chapter can be traced to Pitelis (1982a): a paper presented at an Industrial Economics Workshop at Warwick. An earlier version of its present form was presented at an Economic Theory Workshop, at the University of Warwick.

INTRODUCTION

The socialization of the 'ownership' of the means of production and the retention policies of the joint stock companies have had a dramatic influence on strongly held beliefs with regard to the issue of saving: the question who abstains from consumption so that financial capital accumulation takes place. This influence has revived interest in what the appropriate form of the saving function should be under conditions of advanced capitalism. Without having recognized it, four schools of thought have actually converged to (variations of) the same saving function. This 'Managerialist Saving Function' (MSF) posits differential propensities to save between households on the one hand and corporations on the other, and is consistent with neo-post Keynesian, managerialist and radical theorising.

In this Chapter we revisit this issue in the light of the analysis of the previous Chapters. In Section 1 we examine the historical process by which the convergence towards the MSF has been achieved, and the implications of the MSF for the neoclassical concern with the substitutability of saving.

In Section 2 we extend the MSF towards the incorporation of the Pension Funds Revolution. The extended MSF suggests that the corporations' 'controlling group', saves for small scale shareholders and wage earners in the form of corporate retentions and pension funds. Households may also save via their personal incomes: disposable profit and disposable wage income. If the household propensity to save is zero, as suggested in the previous Chapter, in equilibrium saving will be only corporate saving: retentions and pension funds. Only disequilibrium household saving will exist. Imputing corporate retentions to profit income and

pension funds to wage income, may be a close approximation to obtaining the aggregate proportion of the income of each group, saved. Emphasis however, on 'propensities' appears misplaced: obtained proportions, rather, reflect the 'controlling group's 'saving on behalf of each group, and each group's disequilibrium saving. The result, we suggest, may better be described under the heading 'Monopoly Capitalism Saving Function' (MCSF), to highlight the fact that the proposed function reflects the tendency towards the socialization of the 'ownership' of the means of production, associated with the monopolistic stage of capitalism.

In Section 3 we examine the existing evidence on differential propensities to save in the light of the above. The limitations of the reliance on personal sector propensities only are also noted.

1. THE SAVING FUNCTION

1.1 The Intellectual Roots

The idea that different types of income - classes of income recipients will have different patterns of consumption-saving behaviour, has assumed prominence among economic theorists throughout the years. This idea was reflected in the theory of the saving function.

In its classical version the saving function assumed the form:

$$S = s_{\pi} \Pi \qquad (1)$$
$$0 < s_{\pi} \leq 1 ,$$

where S denotes savings, Π, profits and s_{π} is the propensity to save out of profits. In this form the 'Classical Saving Function' (CSF)

implies that all saving is made out of profits. It is particularly associated with Ricardo[1/] and Marx. In Marx (1954) the driving force of capitalists is competition. See previous Chapter. For Ricardo the underlying force is the striving for power. See Lambrinides (1972) for a detailed exposition. Subsistence requirements ensure zero saving on the part of workers for both Ricardo and Marx.

The advancement of capitalism with its entailed improvement in the absolute standards of living of both capitalists and workers has resulted in workers saving too. This empirical observation gave rise to the neo-Keynesian Saving Function (NKSF) according to which both capitalists and workers save, but the propensity to save of the former is higher than that of the latter.

The NKSF assumed two versions. In Kaldor (1960) it takes the form:

$$S = s_w W + s_\pi \Pi$$
$$0 \leq s_w < s_\pi \leq 1 \quad [2/], \qquad (2)$$

where W stands for Wage income and s_w denotes the propensity to save wage income. In Kaldor's writings, the higher propensity to save profits is justified in terms of the riskier character of profits[3/], and a presumed skewness of profit income in favour of the relatively wealthier-high income earning households. See Hacche (1979). Quite independently of the latter, however, Kaldor (1960) observed, corporate retention in itself is sufficient to justify the differential saving propensities assumption. This observation anticipated the MSF.

In Pasinetti (1962) the NKSF assumed the form:

$$S = s_w (W + \Pi_w) + s_c \Pi_c$$
$$0 \leq s_w < s_c \leq 1 \quad , \tag{3}$$

where Π_w is profits accruing to workers and Π_c, capitalist profits: s_w, now, denotes the propensity to save of the workers and s_c, the propensity to save of the capitalists. That is, contrary to Kaldor's version that is based on differential propensities out of different types of income, Pasinetti's version is based on differential propensities between income receivers. The observation that profit may also be earned by workers was proposed by Pasinetti, as a 'correction' of Kaldor's form of the NKSF. The correction, however, becomes redundant, if due to retention and risk workers profits are saved in the same proportion as capitalist profits. See Hacche (1979).

In the neoclassical tradition, e.g. of Fisher (1965), savings are taken to be determined by the independent decisions of all households each making a deliberate and conscious allocation of current income - wealth between present and future consumption. In view of that all the CSF and the NKSF, but also the 'proportional saving function' (PSF) of the form:

$$S = sY$$
$$0 < s < 1 \quad , \tag{4}$$

derived from (2) by assuming $s_w = s_\pi$, have been dismissed by many neo-classicals: as they imply that a fixed part of income is saved. See e.g. Bliss, (1976), and Dixit, (1976).[4/] In (4) Y denotes total income and s the propensity to save Y.

A second critique to the NKSF on the part of the neoclassicals arose from the presumption that implicit in the NKSF is the notion of

'permanent classes'. See Kregel, (1971). These criticisms have generated what we will call a concern for relevance: i.e. an attempt on the part of neo-Keynesians to provide a strong justification for the NKSF based on the realization of the increasing importance of the corporate sector for the issue of saving.

1.2 The Concern for Relevance

The best manifestation of this concern is Kaldor (1966). In this paper Kaldor repeats his earlier point on the role of business retention : but elevates it from a footnote to the cornerstone of his analysis.

In an oft quoted statement, Kaldor suggested that he has

> 'always regarded the high saving propensity out of profits as something which attaches to the nature of business income, and not to the wealth (or other peculiarities) of the individuals who own property. ... the high savings propensity attaches to profits as such, not to capitalists as such.' (p. 310)[5].

The justification of this view is given by Kaldor, in terms of the fact that unlike the 19th century tycoon who owned, and saved in, his firm, today's corporations are owned by rentier-capitalists (shareholders) whose propensity to save out of their personal income need bear little relation to that of the enterprises they own. To the extent shareholders consume all their dividends and/or their capital and capital gains, this helps to enhance 'the difference in savings propensities between business income and personal income'. (ibid. p. 311).

Despite the fact that Kaldor still presents the above views as a justification for (2) his ideas effectively suggest a new form of the

saving function. In its simplest version this can be written as:

$$S = s_h (W + (1-r)\ \Pi) + r\Pi \qquad (5)$$

$$0 \leq s_h < r < 1 \ ,$$

where r is the retention ratio and s_h is the common propensity to save out of household income. In (5) the differential propensity between households on the one hand, and corporations, on the other, is introduced for the first time.

In his more recent writings, Pasinetti (1983) also acknowledges the importance

> 'of hypothesizing a world of corporate business and exploring the implications of the contrasting decisions of corporations and the public at large'. (p. 100)

He observes that since Kaldor was thinking along these lines from the very beginning, his analysis should have been explicitly framed in these terms and refers to Wood (1975), for a contribution along these lines. Wood's, however, belongs to just one of four parallel developments that have actually converged on (variations of) equation (5): neo-post Keynesians, managerialists and radicals.

1.3 Convergence

In the post Keynesian tradition, Wood (1975) and Kregel (1971) are the two basic representatives. Kregel's basic aim was to demonstrate that the crucial aspect of neo-Keynesian writings on growth was not the way they defined thriftiness, but rather the idea that the investment and

saving decisions are independent from each other. To do that, Kregel employs the notion of a 'mythical property owning democracy'. (p. 195), in which there are 'no wages class and profits class in the sense that every household draws income from both sources' (p. 180). This 'democracy' further 'is divided into firms and households' (p. 181), and employs 'managers' to run the corporations, who 'are automata who have no life function except as corporate decision makers'. (p. 213).

In such a world, Kregel suggests, a differential propensities saving function can still be obtained without the need to assume 'permanent classes'. This function can take the form of equation (5).

Wood (1975) shares the view too. Notable is that Wood proposes the original Kaldorian version (2) and the neo-Kaldorian version (5), as alternative forms of the saving function, in direct contrast to Kaldor who used (5) as a justification for (2).

The managerialist and radical - in particular Marglin's - ideas on the saving function are contained in our analysis in Chapter 2, and we will not repeat them here. Suffice it to note that they are consistent with (5). The one notable modification-extension to the latter, is introduced by the Galbraith-Marglin idea of zero equilibrium household saving. Formally, this implies that we can write $s_h = 0$ in (5), and obtain:

$$S = r\Pi$$
$$0 < r < 1, \qquad (6)$$

implying that in equilibrium all savings are retained profits. Kregel too entertained such a possibility.

In the radical tradition, another variation of (5) is proposed by Cowling (1982). Cowling considers the thrust of the Marglinian arguments convincing but observes that

> 'it would seem to be flying in the face of empirical evidence to suggest that the equilibrium propensity to save out of property income will be the same as out of wage income.' (p. 50).

In this view (5), is modified to read:

$$S = s_w W + s_\pi ((1-r)\Pi) + r\Pi \qquad (7)$$

$$0 \leq s_w < s_\pi < r < 1 .$$

Evidently (7) reduces to (5) if $s_w = s_\pi$ and to (6), if $s_w = s_\pi = s_h = 0$.

The above, we think, highlight the remarkable convergence of neo-Keynesian, post-Keynesian, managerialist and radical ideas on this issue. The tendency towards this direction received early notice from Lambrinides (1973). He suggested that Kaldor's (1966) ideas should not be taken as a justification for his original version of the NKSF (2): rather, the latter should be replaced by

> 'the managerial saving function, which considers private savings to be a function inter alia, of the division of after tax private income, between households, and privately owned corporations', (p. 47):

a view consistent with Pasinetti (1983) and Wood (1975).

However, the convergence in form, masks an important difference in perspective. What for Kregel is simply a mythical notion, or a

device to oppose the 'permanent classes' critique, for managerialists and Marglin, is the description of the real world. See Chapter 2. Another difference arises from the implications of the MSF with regard to the issue of substitutability.

1.4 Substitutability

In its form (5), the MSF has a most interesting implication: it posits independence between corporate saving ($r\Pi$) on the one hand, and household saving, on the other. Alternatively it implies that households do not want, or are not able, to compensate for changes in corporate policies by appropriately manipulating their personal saving.[6/]

The above becomes evident when one considers the alternative to the MSF: i.e. the neoclassical idea of perfect substitution. If households are able to 'pierce the corporate veil' and behave accordingly, then the ex-post observed existence of differential propensities, masks the fact that such differences simply reflect the ex-ante decision of households, as to the preferred, on their part, form of their savings. In this argument the Kaldorian observation that the higher is consumption out of personal income, the higher is the differential propensity to save household and corporate income respectively, is just an illusion: which is based on the ex-post accounting identity that total saving equals corporate saving plus personal saving. It does not take us any further either. In principle the existence of ex-ante substitution can be tested empirically: e.g. by attaching a coefficient to the corporate retentions variable and testing whether it differs significantly from the one of household income. See e.g. Modigliani (1970). If it does not then substitution is perfect and reality is closer to the proportional

saving function: households view all private income as their income and base their intertemporal utility maximization plans on this homogenous aggregate. See also Chapter 2 and Part II.

The issue of substitution marks a second division between the proponents of the MSF. Kaldor paid little attention to its importance: while Marris (1967) and particularly Marglin (1975, 1975a) attempted explicitly to justify their views of imperfect substitution the former, and independence the latter. The debate and our views on this matter were examined in Chapter 2.

The conclusion must be that any reliance on differential propensities to save out of household and corporate income that assumes away the issue of substitution may be subject to grave doubt. In particular, with perfect substitution all (versions of) the MSF break down and the PSF is correct.

The only attempt to compare and contrast the MSF and the neo-classical implication of perfect substitution, is Lambrinides (1972), referred to in the second Chapter. Set out explicitly in the frame-work at the Life Cycle Hypothesis Lambrinides found in no case statistically equal coefficients between corporate retentions and household income, by use of international cross section and U.S. time series data: which contradicts the neoclassical views.

Important, however, is that despite their different concerns, all studies on the effects of corporate retentions on personal savings, surveyed in Chapter 2, effectively constitute tests of the MSF versus its neoclassical alternative. As we saw in nearly all cases the latter's

implications were not accepted: giving support to the MSF. Further, they all give indirect support to the Kaldorian version of the NKSF: i.e. equation (2), since by restricting personal wage and profit income to be equal and by obtaining a differential impact for the part of profits retained, they imply a higher propensity to save aggregate profits than aggregate wage income.[7/]

None of the above studies found support for the zero propensity to save personal income suggested in the second Chapter. A reason for that, as well as the reason why the MSF is insufficient today, is provided by the pension funds revolution.[8/]

2. THE 'PENSION FUNDS REVOLUTION' AND THE MANAGERIALIST SAVING FUNCTION

2.1 An Extension

The thesis of the 'pension funds revolution' (PFR), was originally suggested as the workers counterrevolution to managers' revolution. Via their pension funds shareholding, it is argued, workers rather than managers today own and control the means of production. See Chapter 2.

The introduction of the corporate pension funds schemes has this important implication for the saving function: as in the case of retentions, the net inflow into the funds is, strictly speaking, unavailable for consumption. Further, it represents a net addition to corporate sector's savings.

To demonstrate the above, assume a corporate sector, consisting of companies and financial institutions.[9/], and a household sector,

consisting of wage income earners and profit income earners. Private income is equal to corporate income plus household income, and it is all ultimately 'owned' by the household sector. Thus private income can also be written as the sum of total wage income, W, and total profit income, Π.

Out of the total income W, they own, workers receive only a part $(1-\rho)W$, and save a part of it s_w. The remaining ρW is retained by the corporate sector in the form of the net inflow into the pension funds. Similarly, profit income earners receive a part $(1-r)\Pi$ of profits, and save a proportion s_π out of it, while $r\Pi$ is left in the corporate sector in the form of corporate retentions.

In the light of the above, we can write the wage earners saving function as:

$$S_w = s_w(1-\rho)W + \rho W \qquad (8)$$

$$0 \leq s_w < \rho < 1 \ ,$$

where ρ denotes the net inflow into the pension funds ratio. Similarly, we can write the profit earners saving function as:

$$S_\pi = s_\pi (1-r)\Pi + r\Pi \qquad (9)$$

$$0 \leq s_\pi < r < 1 \ ,$$

where r denotes the retention ratio. From (8) and (9), the household saving function will be :

$$S_h = s_w (1-\rho) W + s_\pi (1-r)\Pi \qquad (10)$$

$$0 \leqslant s_w \gtrless s_\pi < 1.$$

The corporate saving function, on the other hand, will be:

$$S_B = \rho W + r\Pi$$

$$0 < \rho \gtrless r < 1 , \qquad (11)$$

where S_B denotes business saving. Adding (8) to (9) or (10) to (11), we can obtain the aggregate saving function:

$$S = s_w (1-\rho) W + s_\pi (1-r)\Pi + \rho W + r\Pi \qquad (12)$$

$$0 \leqslant s_w \gtrless s_\pi < \rho \gtrless r < 1.$$

In the case $s_w = s_\pi = 0$, as argued in Chapter 2, the aggregate saving function reduces to the corporate saving function, implying that all saving is corporate saving.

Writing $s_w = s_\pi = s_h$, we can write (12) in a form similar to the MSF, that is:

$$S = s_h ((1-\rho) W + (1-r)\Pi) + \rho W + r\Pi \qquad (13)$$

$$0 \leqslant s_h < \rho \gtrless r < 1,$$

the difference from (5) being that wage earners are allowed to save only out of their disposable income $(1-\rho)W$, while ρW represents a net addition to saving, as $r\Pi$.

The extended form of the MSF, (13) suffers from the same problem as (5): it is always true only in an ex-post accounting sense. However, if perfect substitutability exists between pension funds and wage earners personal saving on the one hand, and corporate retention and shareholders personal savings, on the other, (13) is invalid and the PSF obtains again.

Although, there is no direct evidence on (13) the studies on the impact of pension funds on other personal saving, examined in the previous Chapter, acquire importance here. As these studies find support for a differential propensity to save household income on the one hand,and pension funds on the other, they provide indirect support for (13): this is strengthened when the evidence on retentions is also considered. Direct evidence we have in Chapters 5 and 6. These too, support the above propositions.

2.2 Aggregate 'Propensities' to Save

An important implication of the Pension Funds Revolution and the extended MSF, (13), is that the latter is no longer in itself sufficient to justify Kaldor's contention for a higher propensity to save profit income: since for a sufficiently high ρ, the aggregate proportion of wage income saved may be equal to, or higher than the aggregate proportion of profit income saved. The only way to test if a differential proportion of each group's income is saved, is by appropriately imputing pension funds and corporate retentions to wage and profit income. If a differential 'propensity' is found, this should be then explained in terms other than the retention policies of the firms.

Most important is perhaps the fact that the thus obtained proportions of income saved cannot, by any stretch of imagination, be named propensities. Rather, they represent the respective sums of each group's propensity to save, plus the proportion of their income that the 'controlling group' of the corporate sector saves for them. Alternatively, if the equilibrium propensity to save disposable shares is zero, obtained proportions reflect the sum of each group's disequilibrium saving plus what the corporate controlling group saves for them. The term propensities is misleading to say the least.10/

Two more issues are worth stressing. The first regards terminology. According to the analysis of Chapters1 and 2, the extended MSF simply reflects the extension of the socialization of the 'ownership' of the means of production to include wage earners too. This extension, and for this matter the very introduction of share ownership via the joint stock company, are specifically associated with the monopolistic stage of advanced capitalism. In this sense, we suggest, the extended MSF may better be described under the heading 'Monopoly Capitalism Saving Function' (MCSF).

The second issue regards the idea that the net inflow into pension funds can be considered as distinct of, and a net addition to, corporate retentions. The alternative is to suggest that if (or since) the net inflow to pension funds is used for the purchase of shares, pension funds cannot be separately identified but they represent in each period part of dividends income accruing to households and part of retentions left in the firms. In other words, $(1-r)\Pi$ in (5) includes the part of the pension funds income paid-out

while $r\Pi$ includes the part of pension funds income retained in the corporate sector.

Although there is a grain of truth in the above argument, it is wrong as a matter of fact or convention. To understand that, consider the following scenario. In every period $t-1$ the net inflow into pension funds is ρW. Assume for simplicity that it is all spent to buy shares.[11/] In period t, a part of last years ρW will take the form of dividends: the rest of retentions. The crucial point here, however, is that the dividends part never actually goes to wage earners. Rather it is left with those controlling the funds, to give rise to this year's net inflow: along with the excess of this year's contributions of employees and employers to the funds, to the benefits paid back to employees. The importance of the above is that it demonstrates that for the corporate sector as a whole, part of reported dividends is no less than retentions; or a net addition to reported retentions. Similarly the excess of contributions over benefits is part of corporate income, and for this purpose a net addition to retentions too.

The above we think, justify our use of the net inflow into the funds, as a net addition to retentions. Evidently, if one is prepared to redefine the relevant variables (i.e. W, Π and $r\Pi$), along the lines suggested above, in (5), then one can obtain the MCSF as the MSF: in which case our suggested extension becomes simply an exercise in the appropriate definitions of variables.

3. THE EXISTING EVIDENCE ON DIFFERENTIAL PROPENSITIES

The history of the direct evidence on differential propensities is intriguing. And as, unfortunately, is often the case, the further back one goes, the more interesting the existing studies are: reflecting perhaps the hazards of 'specialization.

The first empirical work on the issue is Kalecki (1971), first published in 1933. Kalecki estimated a profits equation using U.S. time series (1929-1940). Assuming zero propensity to save by workers, he deduced the capitalists propensity to save from an early version of the 'multiplier' ! His definition of capitalist income included corporate retentions (gross of depreciation) along with dividends, rent, interest and withdrawals from the unincorporated sector. The proportion of capitalist income saved - the term propensity is not used by Kalecki - was found to be 75%.

Kalecki's lead was followed by Klein (1950). Klein estimated a simultaneous equations model for the U.S. (1921-1941), consisting of a consumption, an investment and a demand for labour equations. This, he suggested could be 'called a Marxian theory of effective demand' (p. 63) model. In the consumption equation Klein distinguished between two types of income: wage income, consisting of employee compensation plus contributions from the central government, and profit income, defined as in Kalecki. For lack of data income shares were measured before tax. Klein obtained short run 'propensities' to save of the order of 75% and 20%, for profit income and wage income respectively. The use of the functional shares was suggested as a proxy for the size distribution of income.

Klein's work was the first to explicitly introduce the idea of differential propensities out of both wage and profit income and it preceeds Kaldor's own formulation by six years ! Both Klein and Kaldor, relied on a definition of profits including retentions, as did, Kalecki. Subsequent work, however, including Klein's own, disregarded retentions, focusing on disposable shares out of personal sector income only.

The first study along these lines is the well known work by Brown (1952) on habit persistence. Brown used Canadian time series and based his formulation explicitly on Klein's suggestions. However, he focused on after tax disposable shares, and excluded retentions from profit income. Despite that, his implied short run marginal 'propensities' to save wage and profit income were 40% and 70% respectively.

The studies of Klein and Coldberger (1955) and Klein et. al. (1961), by use of U.S. and U.K. time series respectively relied on personal sector income shares only, and found support for the differential propensities to save idea but of a lower magnitude than any of the previous studies: in the case of Klein et. al. for example, the long run marginal propensities to save wage and property income, were 0.56 and 0.83 respectively. Similar results were obtained by Houthakker (1960) in an international cross section. More support for the 'Kaldorian' idea was given by Ando and Modigliani (1963) ! The authors attributed this finding to the idea that property income stands as a (poor) proxy for wealth.

More recently, Burmeister and Taubman (1969) used U.S. time series and adopted a safe versus risky distinction of personal sector income: i.e. wage income, rent and interest on the one hand, and dividends plus income from self employment on the other. Corporate retentions were included as an additional explanatory variable. The 'propensity'to save personal sector risky income was higher than that of personal sector safe income, but never significantly so. The retentions variable (see Chapter 2) was found to add-on on other personal saving, which supports the idea that the aggregate proportion of risky income saved, is higher than that of safe income.

In the 1970's, Surrey (1970) used U.K. time series and found equilibrium 'propensities' to save personal sector wage income and profit income, of the order of 0.25 and 0.40 respectively. As Surrey identifies current grants from the central government separately from (the rest of) wage income and given the fact that he obtained lower 'propensities' to save out of this type of income, one is led to infer an even lower 'propensity' to save wage income. This is still in line with the differential 'propensities' presumption. Holbrook and Stafford (1971), however, used U.S. cross section and found no difference between the 'propensities' to save labour income (excluding transfers) and profit income. Taylor (1971) has similar findings by use of U.S. time series. The propensity to save labour income is in fact higher than that of property income but not significantly so. Transfer income is separately identified and its coefficient is as high as 0.88 suggesting an even higher propensity to save wage income ! Blinder (1975), used U.S. time series, (1947-1972) and found no evidence for differential 'propensities' out of personal sector shares only, either.

In the 1980's Arestis and Driver (1980) use U.K. time series

(1957-1977) and find a small difference between the 'propensity' to save labour and property income. The 'propensity' to save labour income in the short run is 0.60 while that of property income is 0.75. Transfer income is separately identified and has a 'propensity' to save close to that of property income, thus suggesting an even smaller difference between aggregate personal sector wage and property incomes, than the already 'tentative' statistically existing one. These results are challenged by Murfin (1980) who by use of quarterly U.K. time series (1963-1976), obtains long run 'propensities' to save wage and property income, of the order of 0.16 and 0.70 respectively. Koskela and Virén (1984) use panel data for the 1963-1980 period. Various types of income are identified with transfer income identified separately from labour income: and entrepreneurial income and corporate retentions, (see also chapter 2), from property income. Small difference is found between the labour and property income 'propensities'.

From the above it seems prudent to conclude that the evidence on differential 'propensities' to save out of personal sector shares only, is not inconsistent with the idea that the 'propensities' to save wage and property income are equal. All recent (in the last fifteen years) studies, but Murfin's are consistent with this view.

The above, however, does not imply that wage and property income are saved in the same proportions: rather it reflects the tendency in recent work to disregard corporate retentions. As the proportion of income saved within the corporations increase, this focus on personal sector shares only, is bound to lead to an apparent equalization of the income distribution statistics, (see Brittain, 1966, and Dobb, 1958), and also an equalization of the 'propensities' to save. For obvious reasons this has clearly manifested itself in the last fifteen years.

Although from the early work of Klein, (see also Klein et. al. 1956), one could be led to infer that the abandonment of the gross measure of profit income for the personal sector one, was made under the implicit assumption that corporate retentions will add-on on other personal savings and as a result the aggregate 'propensity' to save profits could thus be obtained arithmetically, this is never made explicit in Klein and Coldberger and Klein et. al. Further, the non-substitution of savings cannot be just assumed but it needs to be demonstrated as e.g. in Burmeister and Taubman, (see also Chapter 2). Even in this case, though, a differential 'propensity' is just implied but not actually shown: the only way to do the latter being to impute retentions to profit income as in Klein (1950).

More important is the fact that following the lead of Klein and Coldberger, all subsequent studies do not impute retentions to profit income, without appearing to realize that in so doing they fail to test what is often supposed to be under examination: the 'Kaldorian' hypothesis.

The only recent attempts to impute retentions to profit income are Modigliani and Tarantelli (1975), and Pitelis (1982a). Modigliani and Tarantelli, obtained a'propensity'to save profit income thus defined, four times as high as that of wage income (0.60 and 0.15 respectively) by use of Italian time series. As in Ando and Modigliani, the authors questioned their finding: which they attributed to special characteristics of the Italian economy and the idea that profit income is a proxy for wealth. Quite apart from that, it is perhaps worth noting this sad state of affairs: the only consistent test of the 'Kaldorian' hypothesis comes from Modigliani, the most prominent critic of the hypothesis !

Pitelis (1982a) tested the sensitivity of the 'propensity' to save profit income to the inclusion or exclusion in it, of retentions. By use of U.K. time series the results obtained were in line with the ideas suggested above: i.e. the exclusion of retentions resulted in the short run 'propensities' to save personal sector profit and wage income being very close to each other (around 0.40 and 0.30 respectively), while their inclusion in profit income resulted in a 'propensity' to save profit income as high as 0.75, with the wage income 'propensity' the same as before.

Taking into account the evidence on retentions and pension funds surveyed in Chapter 2, which, as already emphasized constitute indirect evidence on differential 'propensities', the general picture can be summarized as follows: there is substantial evidence that retentions do not substitute perfectly with personal sector income, implying a higher 'propensity' to save aggregate profit income than wage income: there is substantial evidence to suggest that the net inflow into the pension funds does not substitute perfectly with personal sector, or net personal, income, implying a higher 'propensity' to save aggregate wage income, than personal sector profit income. There is also substantial direct evidence to suggest that the 'propensity' to save personal sector profit income is not substantially higher than that of personal sector wage income, (often including pension funds)[12/]. There is also evidence to suggest that despite this latter observation, retentions are saved in a higher proportion than both personal sector wage and profit income: implying a higher 'propensity' to save aggregate profit income. There is also evidence to suggest that the 'propensity' to save aggregate profit income is higher than that of aggregate wage income. There is finally evidence to suggest that the actual propensity of households to save (i.e. out of their net personal disposable income) is zero.

There is no direct evidence to suggest that pension funds income is saved in a higher proportion than other wage income: or that the propensity to save out of both net personal disposable shares, is zero. In brief, there is no direct evidence on the MCSF as proposed in (13). Further, there is no attempt to integrate all the above hypotheses and test them in a common framework. These tasks are undertaken in the second part of this thesis. Suffice it to note here that they largely support the hypotheses advanced in the previous and the present Chapter.

SUMMARY

We examined the impact of the process of the socialization of the 'ownership' of the means of production, on the form of the saving function. We saw the convergence towards the 'Managerialist Saving Function' and examined a potential extension to account for the Pension Funds Revolution. The 'Monopoly Capitalism Saving Function' proposed was found to receive support from the existing direct and indirect evidence.

NOTES

1/ The CSF was also used by Kalecki (1971), as well as some contemporary neo-Marxists. See e.g. Rowthorn (1981). Post-Kaleckians, however, have adopted (versions of) the neo-Keynesian Saving Function (see below), perhaps reflecting the concern for relevance to which we refer in Section 1.2. See e.g. Sawyer (1982).

2/ Negative propensity to save wage income is allowed in Kaldor (1966).

3/ It has been observed that this argument of Kaldor's is self contradictory, in that if profit is defined to include all types of property income, the relatively safer rent and interest do not coexist comfortably with riskier types of income such as dividends and income from self employment. See e.g. Hacche (1979).

4/ Criticisms to the neoclassical hypothesis abound too. Bliss (1976) e.g. argued that it is by construction unable to account of the uncertainties of the future, and assumes implicitly that all households are perfectly creditworthy. Other criticisms refer to its operational form: the idea that in their estimated forms, the Life Cycle Hypothesis of Ando and Modigliani (1963), or the Permanent Income Hypothesis of Friedman (1957) hardly differ from more naive models of consumption such as the Habit Persistence Hypothesis of Brown (1952). See e.g. Marglin (1975), Green (1979) and the second part of this thesis. Finally critics have referred to its ideological functions, see e.g. Green (1979), and in particular its implicatons on the effectiveness of interventionist policy.

5/ Kregel (1971) traces this idea back to the mid fifties, in the writings of Robinson.

6/ Which also implies that according to (5), the conventional wisdom to exclude retentions from the definition of disposable income in empirical work on the consumption-saving function, is correct. See also Sawyer (1982). It is worth noting, however, that far from being a conscious decision on the part of empirical economists, this treatment often reflects the uncritical use of the offical statistics. See Part II of the thesis.

7/ In this sense trying to justify (2) in terms of (5) implies, in econometric terminology, the imposing of the invalid (ex-post) restriction, $s_h(1-r)\Pi=I=s_\pi$.

8/ The extension we suggest can be traced back to the empirical aspects of the work of Kaldor (1966) and Marglin (1975): i.e. the fact that the former refers to pension funds saving on the part of the workers to justify (2), while the latter excludes pension funds from his definition of disposable income, in his attempt to show that the equilibrium Marginal Propensity to Save net personal disposable income is zero.

9/ This treatment is in line with our suggestions in Chapter 1, and it is also followed in the National Accounts.

10/ It has ideological connotations too: as it implies that households do as they feel, or act according to their 'psychological' urges.

11/ In practice a far smaller proportion is devoted to that purpose. Bank managed pension funds, in 1981, for example, invested in U.K. equities 51.7% of their income, 13% overseas, and 23.7% to U.K. gilts. 8.6% was invested to U.K. property, and the rest to other activities. See Minns (1982).

12/ Again this treatment is often the result of an uncritical use of the offical statistics, rather than of conscious choice. See note 6 and Part II of the thesis.

PART II

CORPORATE CONTROL, SOCIAL CHOICE AND FINANCIAL CAPITAL ACCUMULATION : EVIDENCE

CHAPTER 5

The Effects of Corporate Retentions on Personal Savings : A Test of the Managerialist Saving Function and the Life Cycle Hypothesis*

* This Chapter relies on and extends ideas and findings that first appeared in Pitelis (1983b). An earlier version of this paper was presented at an Industrial Economics Workshop at Warwick. An earlier version of its present form was presented at the Association of University Teachers of Economics/Royal Economic Society Conference, Bath, 1984.

INTRODUCTION

As we have shown in Chapter 2, the issue of the effects of corporate retentions on personal savings has recently been the subject of thorough examination purporting: to test the impact of retentions on capital formation: to 'test' the 'constancy' of the private saving ratio, and/or to test the effects of 'contractual' saving on 'discretionary' saving, i.e. the implication of the Life Cycle Hypothesis on substitutability. Further, the aim in one study was to test for differences in the propensities to save, while in another, to test the Managerialist Saving Function.

Given the above interrelated, overlapping and complementary aims, as well as the evident importance of the saving function for neo-Keynesian growth theories (see Chapter 4), one cannot fail to realize the importance of undertaking empirical work in the area. This is even more important for the U.K. where, as seen in Chapter 2, there is only one study: by Feldstein and Fane (1973).

An important consideration arising here, is that the Managerial Saving Function, as well as the neo-Keynesian Saving Function in all its versions, are pure theoretical constructs: that is, they have never been brought in forms appropriate for testing with empirical data. The implications of these constructs, instead, have been tested either in simplistic estimated forms as e.g. in Klein (1950) or in 'ad-hoc' specified equations such as the Koyck transformation, e.g. in Klein et. al. (1961), or finally in the very framework of the Life Cycle Hypothesis, e.g. in Lambrinides (1974).

To account for these problems we undertake, as a first step in

this Chapter, to show that regarding at least their estimated form, a Simple Linear (SL), a Koyck transformation Distributed Lag (DL), the Life Cycle Hypothesis (LCH) and the Houthakker-Taylor (T-T) models of saving, can lead to the same general estimated form, in which they can be nested as special cases. The implications of alternative saving functions can then be tested in this common framework. It is worth stressing that as a whole the above models are consistent with most consumption-saving specifications proposed to date. The usefulness of the above procedure also arises from the fact that most empirical studies examined in Chapter 2, were cast into versions of the LCH.[1/]

In Section 1 we propose and test the four models by use of the less explored U.K. data. We attempt to provide conclusive evidence by (i) examining a longer period of time than Feldstein and Fane (1973) and any of the previous studies, (ii) adopting a fairly comprehensive range of models - specifications, explanatory variables, and alternative definitions of the dependent variable. Section 2, has discussion and conclusions.

1. TESTS OF THE MANAGERIALIST SAVING FUNCTION AND THE LIFE CYCLE HYPOTHESIS

In its simplest form the hypothesis under examination can be written as:

$$PRSA_t = s\ (PSDI_t,\ CORE_t,\ IR_t)\ , \qquad (1)$$

where s denotes a linear functional form, PSDI is personal sector disposable income, CORE is corporate retentions, PRSA is private savings (i.e. personal sector savings, PSS, plus corporate retentions), and IR is the interest rate[2/]: t is a time subscript. For estimation purposes and including a constant term, the stochastic version of (1)

can be written as:

$$PRSA_t = \alpha_o + \alpha_1 PSDI_t + \alpha_2 CORE_t + \alpha_3 IR_t + u_t \qquad (2)$$

$$u_t = NID\ (O,\ \sigma^2).$$

In terms of (2) the implications of the rival hypotheses analysed in Chapter 2, can be written as:

Perfect substitution $\alpha_2 = O$

Imperfect substitution $O < \alpha_2 < 1$

Independence or Add-on $\alpha_2 = 1$.

1.1 The Simple Linear Model

This involves estimating versions of (2) with one or more lags in (some of) the explanatory variables. It avoids problems of dynamic specification but also provides useful information on the dynamic specification to be adopted. In Table 1 we report four estimated equations. In 1.1 PSDI is included both concurrently and lagged by one period. The negative sign of the coefficient of the lagged PSDI suggests that the change of this variable plays an important role in explaining the dependent variable.[3/] To test if it is only the change of PSDI that affects PRSA (implying a marginal propensity to save PSDI equal to zero), in 1.2 we restrict the coefficients of $PSDI_t$ and $PSDI_{t-1}$ to be equal. An F test rejects this restriction at the 5% level. Thus, in 1.3 both the level and change of PSDI are included as explanatory variables. Equation1.3 exactly reproduces equation 1.1. The marginal 'propensity' to save PSDI is 0.19. The last equation in Table 1, is 1.4. It is as 1.1 (and 1.3) but also includes the lagged CORE variable. This is positive and significant and substantially improves the specification both in terms

TABLE 1

Tests of Rival Hypotheses in a Simple Linear (SL) Model

Dependent Variable : PRSA : Annual Data 1951-1981 UK

Eqn.No.	Constant	$PSDI_t$	$PSDI_{t-1}$	$\Delta(PSDI_t)$	$CORE_t$	$CORE_{t-1}$	IR_t	$\hat{\rho}$	SSE	$\bar{R}^2$	DW
1.1	-6542.01* (-5.10)	0.31* (7.29)	-0.13* (-2.98)		0.87* (12.69)		307.43* (4.50)	0.76* (6.20)	499 x 10^{10}	0.9576	1.7581
1.2	3233.88 (1.28)			0.24* (6.74)	0.91* (10.51)		480.72* (6.73)	0.98* (33.65)	955 x 10^{10}	0.8741	1.6830
1.3	-6542.01* (-5.10)	0.19* (6.69)		0.13* (2.98)	0.87* (12.69)		307.43* (4.50)	0.76* (6.20)	499 x 10^{10}	0.9576	1.7581
1.4	-5966.08* (-6.55)	0.29* (8.26)	-0.15* (-4.20)		0.87* (15.71)	0.22* (3.92)	297.31* (5.38)	0.72* (5.22)	307 x 10^{10}	0.9766	1.8570

Δ denotes the first difference of the relevant variable.

* denotes significance at the 5% level.

't' ratios in parentheses.

of explanatory power and the sum of squared errors (SSE). Equation 1.4 was the best obtained by the SL model.[4/]

Originally we estimated equations 1.1 to 1.4 with Ordinary Least Squares (OLS), but first order serial correlation (AR1) was found. To remove it a Maximum Likelihood (ML) technique was used; although we recognize that such a finding may be a sign of deficient specification due to the simplistic nature of the SL model. In terms of the rival hypotheses under examination, the SL model gives support to limited substitution of the order of 13%, with the exception of equation 1.2 which supports the add-on. The results of 1.4, however, suggest that the impact of CORE on PRSA is not exhausted in one period.

In summary, the findings of the SL model support the ideas that: the impact of PSDI on PRSA is exhausted in one period: the change of PSDI has a significant impact on PRSA: CORE affect PRSA with a lagged distribution, its one period impact supporting limited (imperfect) substitution: a more dynamic specification might, therefore, be a better means of examining our hypothesis.

1.2 The Distributed Lag Model[5/]

Given the findings of the SL model, and disregarding at the moment the interest rate, we can rewrite (1) as:

$$PRSA_t = \beta_o + \beta_1 PSDI_t + \sum_{i=o}^{\infty} \lambda^i (\beta_2 CORE_{t-i}) + u_t \qquad (3)$$

$$u_t = NID(O,\sigma^2) .$$

(3) effectively introduces an infinite number of lags in the CORE variable and assumes its effects to be geometrically declining.[6/]

Performing the Koyck transformation in (3) gives (in estimating form):

$$PRSA_t = \gamma_o + \gamma_1 PSDI_t + \gamma_2 PSDI_{t-1} + \gamma_3 CORE_t + \gamma_4 PRSA_{t-1} + \varepsilon_t \qquad (4)$$

$$\varepsilon_t = u_t - \lambda u_{t-1}$$

where

$$\gamma_o = \beta_o - \lambda\beta_o, \gamma_1 = \beta_1, \gamma_2 = -\beta_1\lambda, \quad \gamma_3 = \beta_2, \text{ and } \gamma_4 = \lambda .$$

The two well known features of (4) are: the appearance of the one period lagged dependent variable (LDV) in the right hand side, and the fact that the error term is now a first order moving average (MA1) of the original errors. If λ in (4) is significant, OLS estimates will be biased and inconsistent. To account for that we follow Townend (1976) and approximate the MA1 process by a first order autoregressive (AR1) Markov process of the form $u_t = \rho u_{t-1} + \varepsilon_t$ where ε_t is a serially independent disturbance with zero mean. An ML Iterative Technique is applied to obtain values of the ρ's. When significant ρ's are found[7] ML estimates are reported. When ρ's are insigificant equations are re-estimated with OLS and these re-estimates are reported along with the values of the ρ's and their 't' statistics obtained from the ML equation. It should be also noted that since there is no a priori reason to assume 'white noise' errors (see e.g. Malinvaud, 1970), the Koyck transform may also result in removing autocorrelation: if the latter is present in the original errors.[8]

On estimation, (4) gave:

$$PRSA_t = \underset{(-5.61)}{-\ 3700.18^*} + \underset{(6.57)}{0.32^*}\ PSDI_t \underset{(-4.51)}{-\ 0.24^*}\ PSDI_{t-1} + \underset{(13.26)}{0.82^*}\ CORE_t + \underset{(7.75)}{0.42^*}\ PRSA_{t-1} + \underset{(0.29)}{0.06}\ u_{t-1} + \varepsilon_t$$

$$\bar{R}^2 = 0.9959 \quad DW = 1.8793 \quad SSE = 493 \times 10^{10} .$$

Imposing the restriction $\gamma_1 = -\gamma_2$ in (4) we obtain equation 2.1 in Table 2, where the other results from estimating the DL model are also reported. An F test respected the restriction at the 5% level, so in 2.2 we include both the level of PSDI and its change. As it can be seen, the obtained equation exactly reproduces (4). Including the interest rate variable in (3) in a fashion similar to the PSDI variable (as it is implied by the SL model), results in equation 2.3. The latter is inferior to 2.1 and 2.2 in that it exhibits autocorrelated residuals. In all equations, however, the coefficient of the CORE variable fails to be insignificantly different from one at the 5% level of a one tailed 't' test, thus giving support to limited substitution, and, therefore, to the implications of the MSF.

As it will be seen in the next Subsection, implicit in the LCH is the idea that the change of CORE rather than its level best explains PRSA. This we can test by introducing the lagged CORE variable in 2.3. The obtained equation is 2.4. An F test rejects the idea that the coefficients of $CORE_t$ and $CORE_{t-1}$ are equal. The equation is markedly improved, in terms of both explanatory power and SSE. No autocorrelation is present either. The new feature of 2.4 is the insignificant coefficient of the PSDI variable, which implies a zero marginal propensity to save. When PSDI is dropped equation 2.5 is obtained, and an F test accepts the restriction at the 5% level.

If we assume that the function $f(PSDI_t)$ is homomorphic, we can substitute it in 2.5 with its equivalent, $f(PSDI_t) - f(PSDI_{t-1})$. The result is equation 5, which is given below in its estimated form.

Tests of Rival Hypotheses in a Distributed Lag (DL) Model

Dependent Variable : PRSA : Annual Data 1951-1981 U.K.

Eqn.No.	Constant	$PSDI_t$	$\Delta(PSDI_t)$	$CORE_t$	$CORE_{t-1}$	IR_t	IR_{t-1}	PRI_{t-1}	$PRSA_{t-1}$	$\hat{\rho}$	SSE	$\bar{R}^2$	DW
2.1	-1583.85* (-5.74)		0.33* (5.65)	0.84* (11.40)					0.67* (14.65)	0.18 (0.94)	720×10^{10}	0.9942	1.7047
2.2	-3700.18* (-5.61)	0.08* (3.43)	0.24* (4.51)	0.82* (13.26)					0.42* (7.75)	0.06 (0.29)	493×10^{10}	0.9959	1.8793
2.3	-3496.12* (-4.32)	0.06* (2.20)	0.26* (4.26)	0.89* (15.32)		270.18* (4.94)	-0.09 (-0.00)		0.28* (5.25)	0.45* (2.34)	251×10^{10}	0.9929	1.9381
2.4	-2264.34* (-2.93)	0.04 (1.51)	0.27* (4.23)	0.88* (16.41)	-0.29* (-2.14)	215.52* (4.26)	-119.60x (-1.79)		0.57* (5.48)	-0.08 (-0.39)	215×10^{10}	0.9979	2.0652
2.5	-1146.90* (-4.37)		0.34* (8.08)	0.92* (18.97)	-0.42* (-3.95)	220.74* (4.26)	-81.94 (-1.29)		0.68* (8.50)	0.02 (0.09)	237×10^{10}	0.9978	1.9290
2.6	-2300.97* (-3.53)	0.31* (6.83)		0.88* (18.11)		216.28* (4.23)	-117.64x (-1.90)	-0.27* (-4.53)	0.57* (8.97)	-0.05 (-0.25)	215×10^{10}	0.9980	2.0444

Δ denotes the first difference of the relevant variable.

* denotes significance at the 5% level.

x denotes significance at the 10% level.

't' ratios in parentheses.

$$PRSA_t = \underset{(-2.93)}{-2264.34^*} + \underset{(6.64)}{0.31^*}\ PSDI_t - \underset{(-4.43)}{0.27^*}\ PSDI_{t-1} + \underset{(16.41)}{0.88^*}\ CORE_t$$

$$- \underset{(-2.14)}{0.29^*}\ CORE_{t-1} + \underset{(4.26)}{215.22^*}\ IR_t - \underset{(-1.79)}{119.60^x}\ IR_{t-1} + \underset{(5.48)}{0.57^*}\ PRSA_{t-1} \qquad (5)$$

$$- \underset{(-0.39)}{0.08}u_{t-1} + \varepsilon_t$$

$$\bar{R}^2 = 0.9979 \qquad DW = 2.0652 \qquad SSE = 215x10^{10} \ .$$

In the way derived, (5) makes clear that the high coefficient of the PSDI variable should not be viewed as a marginal propensity: as (5) is the exact replica of 2.4. Besides its obvious good econometric performance (5) satisfies a most interesting property. Namely it constitutes an unrestricted version of the Life Cycle Hypothesis if the constant is supressed.[9/]

In (5) the coefficients of the lagged PSDI and CORE variables are very close to each other. When restricted to be equal equation 2.6 in Table 2 obtains. The resulting variable is the lagged private income.[10/] The restriction is easily accepted at the 5% level of an F test and the explanatory power of the equation is improved. Equation 2.5 supports the add-on hypothesis, but all 2.4, (5) and 2.6 support limited substitution of the order of 12% and this may be the principal conclusion of the DL model in face of the superiority of these last equations.

1.3 The Life Cycle Hypothesis

In its most recent version the LCH is given in Modigliani (1975) as

$$C_t = \alpha\ PRI_t + (\delta - r)\ A_t \ , \qquad (6)$$

where C_t denotes consumers expenditure in period t and PRI is private

income.[11/] A_t is end of period wealth, r is the rate of return on assets and α and δ are constants. This is a steady state form of the LCH. Out of steady state α and δ may vary with the rate of interest, the life profile of income and the expected productivity growth. From (6) and the identity

$$A_t = A_{t-1} + PRI_{t-1} - C_{t-1} \quad , \tag{7}$$

Spiro (1962) and more recently Davidson et. al. (1978) derive the equation:

$$C_t = \alpha\ PRI_t + (\delta - r - \alpha)\ PRI_{t-1} + (1 - \delta + r)\ C_{t-1} + \varepsilon_t$$

$$\varepsilon_t = u_t - \lambda u_{t-1} \quad . \tag{8}$$

Substituting in (8) the definition $PRSA_t = PRI_t - C_t$ (9)

we obtain (in estimating form):

$$PRSA_t = \theta_1\ PRI_t + \theta_2\ PRI_{t-1} + \theta_3\ PRSA_{t-1} + \varepsilon_t$$

$$\varepsilon_t = u_t - \lambda u_{t-1} \tag{10}$$

where $\theta_1 = \theta_2 = (1-\alpha)$ and $\theta_3 = (1+r-\delta)$.

Equation (10) is equivalent to a model of the DL form and very similar in spirit to (5). Its estimated version is 3.1 in Table 3. As it stands (10) provides no means by which rival hypotheses can be tested, but on substituting for the definition of PRI, we obtain:

$$PRSA_t = k_1\ PSDI_t + k_2\ CORE_2 + k_3\ PSDI_{t-1} + k_4\ CORE_{t-1}$$

$$+ k_5\ PRSA_{t-1} + \varepsilon_t \tag{11}$$

$$\varepsilon_t = u_t - \lambda u_{t-1} \quad ,$$

The Life Cycle Hypothesis (LCH) and Rival Hypotheses

Dependent Variable : PRSA : Annual Data 1951-1981 UK

Eqn.No.	Constant	$PSDI_t$	$PSDI_{t-1}$	$CORE_t$	$CORE_{t-1}$	PRI_t	PRI_{t-1}	IR_t	IR_{t-1}	$PRSA_{t-1}$	$\hat{\rho}$	SSE	$\bar{R}^2$	DW
3.1						0.62* (13.02)	-0.63* (-12.01)			1.04* (25.16)	0.17 (0.90)	111×10^{11}	N.C.	1.6093
3.2	-2044.88* (-2.05)	0.37* (7.24)	-0.34* (-5.03)	0.89* (13.34)	-0.37* (-2.11)					0.67* (5.12)	0.03 (0.15)	413×10^{10}	0.9961	1.8860
3.3		0.40* (7.99)	-0.43* (-8.44)	0.94* (14.02)	-0.65* (-5.65)					0.92* (16.10)	0.09 (0.44)	485×10^{10}	N.C.	1.7951
3.4		0.38* (9.33)	-0.42* (-10.07)	0.94* (17.55)	-0.44* (-4.49)			248.21* (4.23)		0.70* (10.31)	0.34x (1.82)	290×10^{10}	N.C.	2.0786
3.5		0.38* (7.85)	-0.42* (-8.02)	0.94* (15.78)	-0.44* (-4.13)			247.67* (4.11)	-0.64 (-0.01)	0.71* (7.78)	0.34x (1.76)	290×10^{10}	N.C.	2.0735

Δ denotes the first difference of the relevant variable.

* denotes significance at the 5% level.

x denotes significance at the 10% level.

't' statistics in parentheses.

N.C. Non Computed.

where $k_1 = k_2 = -k_3 = -k_4 = (1-\alpha)$ and $k_5 = (1+r-\delta)$. We can then test these restrictions and the substitution hypothesis in the LCH's own framework.

Results from testing the LCH are reported in Table 3. Equation 3.2 is (11) but with a constant term. 3.3 restricts the constant to be zero as required by (11). An F test rejects this restriction at the 5% level. 3.4 is 3.3 but allows for a differential impact of the interest rate on PRSA. 3.5 also includes the lagged interest rate. In general, 3.1 is rejected against 3.3, and 3.3 against 3.4, while 3.4 is rejected against (5) - its equivalent with a constant - at the 5% level of an F test. F tests were also used to test the equality of the coefficients of $PSDI_t$ and $CORE_t$ restriction of the LCH model. In all cases it was rejected. In all 3.2, 3.3, 3.4 and 3.5 a one tailed 't' test gave support to the add-on hypothesis.

Given the very poor performance of the simple LCH, we alsc estimated an extended LCH. This involves imposing all the implied restrictions in 10 (or 11) and then allowing CORE to affect PRSA differentially, by including it as an additional explanatory variable in (10). This follows Feldstein (1978) and on estimation gave:

$$PRSA_t = \underset{(-7.54)}{-1285.96^*} + \underset{(10.14)}{0.37^*}\,\Delta(PRI_t) + \underset{(8.64)}{0.56^*}\,CORE_t + \underset{(4.36)}{213.04^*}\,IR_t + \underset{(13.97)}{0.62^*}\,PRSA_{t-1} + \underset{(0.93)}{0.19}u_{t-1} + \varepsilon_t \qquad (12)$$

$\bar{R}^2 = 0.9979$ DW = 1.5768 SSE = 254×10^{10} .

We have also added a constant term in (12) and allowed the IR_t to have a differential impact on PRSA. The lagged IR was tried but it was

insignificant and an F test accepted the restriction that it is equal to zero. We can see that (12) performs very well, which suggests that there is much scope in extending the LCH: albeit in doing so one could question the extent to which we have also kept the spirit and the underlying philosophy of this hypothesis.

1.4 The Houthakker-Taylor Model

The theory of saving developed by the Houthakker and Taylor (1970), starts from the proposition that desired wealth, A*, is a function of income, PSDI;

$$A^*_t = s(PSDI_t). \qquad (13)$$

It is then assumed that saving is proportional to the difference between desired and actual wealth: i.e.

$$PSS_t = \zeta\ (A^*_t - A_{t-1}) \ . \qquad (14)$$

Differencing (14) and substituting (13) for A* gives an estimated equation of the form:

$$PSS_t = \zeta_1\ PSS_{t-1} + \zeta_2\ \ \Delta(PSDI_t) + u_t$$

$$u_t = NID\ (O,\sigma^2)\ , \qquad (15)$$

where PSS denotes personal sector savings. More recently (15) has been extended to allow: for different types of income, in Taylor (1971), advertising, in Taylor and Weiserbs (1972), and other explantory variables such as inflation, retentions and the interest rate, in Howrey and Hymans (1978).

It has been observed for some time, see e.g. Swamy (1968), that in its form (15) the H-T model is equivalent to the LCH. The 'equivalence' of the two models suggested by Swamy, was accepted by both Houthakker and Taylor (1970) and Modigliani (1975). The latter in particular considered Swamy's international cross section estimates obtained by use of (15), a 'direct test' of the LCH.

The importance of our result in equation (10) is that it proves the exact equivalence of the estimated forms of the two models, if one is prepared to disregard the difference in the definition of saving and income. Alternatively, starting from (15) it is possible to obtain (10) if the change of CORE is added to (15) and its coefficient is constrained to be equal to that of Δ(PSDI), see e.g. Howrey and Hymans (1978). A third method is described below.

Results from estimating (15) with a constant term are given in Table 4. (Equation 4.1). In this form no test of the substitution hypothesis is possible but adding CORE in both sides we obtain 4.2, which gives support to the add-on hypothesis. 4.1 and 4.2 were also estimated without the constant but an F test rejected this restriction at the 5% level and these results are not reported. Both 4.1 and 4.2 appear well specified and 4.2 outperforms its respective 2.1 of the DL model, despite its apparent simplicity. Moreover it is simple to go from 4.2 to the DL and the LCH: by substituting the lagged PSS in 4.2 for its definition (i.e. $PRSA_{t-1}$ minus $CORE_{t-1}$); and relaxing the restriction that the coefficients of PSDI and $PSDI_{t-1}$ are equal, we obtain equation 3.1 in Table 3. Adding the IR concurrently and lagged by one period results in (5) of the DL model. Dropping the lagged IR gives equation 4.3[12/] in Table 4, that is, equation 3.4 of the LCH augmented to include a constant. An F test again

The Houthakker-Taylor (H-T) Model and Rival Hypotheses

Dependent Variables : PSS in 4.1 : PRSA in 4.2 and 4.3

Annual Data 1951 - 1981 U.K.

Eqn.No.	Constant	$PSDI_t$	$PSDI_{t-1}$	$\Delta(PSDI_t)$	$CORE_t$	$CORE_{t-1}$	IR_t	PSS_{t-1}	$PRSA_{t-1}$	$\hat{\rho}$	SSE	$\bar{R}^2$	DW
4.1	-389.56^{x} (-1.89)			0.44* (8.53)				1.01* (34.56)		-0.09 (-0.41)	745×10^{10}	0.9765	1.9019
4.2	-666.24* (-2.31)			0.40* (6.76)	1.08* (14.93)			0.93* (14.93)		-0.15 (-0.72)	696×10^{10}	0.9944	2.0659
4.3	-2237.30* (-2.40)	0.35* (8.77)	-0.33* (-5.77)		0.91* (17.97)	-0.21 (-1.56)	238.73* (4.44)		0.48* (4.03)	0.28 (1.35)	233×10^{10}	0.9959	1.9451

Δ denotes the first difference of the relevant variable.

* denotes significance at the 5% level.

^{x} denotes significance at the 10% level.

't' ratios in parenteses.

rejects the exclusion of the constant, at the 5% level. 4.3 supports the idea of limited substitution.

The general conclusions of this section are: that corporate retentions substitute to a very limited degree with personal sector savings: that this finding varies little depending on the model-specification adopted, and finally: that when extended to include corporate retentions all models can be shown to lead to the same estimated form. When the most general form (5) is tested down, it is seen that all other equations (but 2.5 and 2.6) are rejected against it. The simple LCH has the worst performance of any of the other models.

2. DISCUSSION AND CONCLUSIONS

The data used for the purposes of this Chapter, as well as the three empirical Chapters to follow, are described in the Appendix, at the end of Part II of the thesis. In this Section we concentrate on some of the results that present some interest and/or on potential limitations of our results.

First the interest rate. Throughout, it was found to have a positive and significant impact on PRSA. This supports the substitution effect of interest on consumption and it is in accord with earlier U.K. findings by Peel (1975). The choice of the appropriate IR series, however, is a very sensitive matter, surrounded by controversy, (see e.g. Howrey and Hymans,1978). To partly account for the problem we also used three different series: the treasury bill yield (1955-1981, Blue Book) and the short run and long run government bond yields (IMF). Finally we created and used (see data Appendix) a real interest rate series. In all cases, although small variations were observed, the results were largely the same.

The 'gross' measure of CORE was used in this work: i.e. retentions plus depreciation. This was motivated by the fact that depreciation allowances are usually used for tax avoidance or for investment when opportunities arise. Also, since earlier studies that used both the 'gross' and 'net' measures did not observe significant differences (see e.g. Feldstein, 1973, Lambrinides, 1974). Finally, if an upwards bias is present due to the use of this measure, it will tend to be countered by a downwards bias arising from the fact that 'quasi' retentions (i.e. retentions of the unincorporated sector) are treated in the official statistics as PSDI instead of CORE, which they are. This bias might have been strong in recent years.[13/]

We see, therefore, that our findings were robust too: four alternative models of savings and two alternative definitions of savings as well as to five different IR series. We also estimated consumption functions and used first differences specifications of the equations reported. In all cases similar results were found. More results along these lines are presented in the next three Chapters. Suffice it to note here that the same findings are supported.

A potential problem with the findings may arise from the fact that we made use of the official definition of income: i.e. PSDI, as all the other studies on this issue. Since PSDI includes the net inflow into pension funds, the obtained coefficients of the PSDI variable might be biased upwards in case the 'propensity' to save pension funds is higher than that of the other components of PSDI. This issue is taken up again in the next Chapter where the necessary corrections of the variables are also undertaken. Suffice it to say here that our treatment was necessitated by the need to test the MSF, which does require such a treatment, (see also Chapter 4).

Serious econometric problems were not present in the context of this work. Autocorrelation was rarely present and never in the more general specifications. When multicollinearity seemed to turn up, it was found that it was rather the result of omitted variables bias, solved by increasing (rather than decreasing) the dimensionality of the parameter space: an observation previously emphasised by Davidson et. al. (1978). The danger of simultaneous equation bias is very real in our framework, in which case OLS estimates will be (asymptotically) biased and inconsistent. Still ML estimates were never significantly different, which would suggest that we might not need to worry unduly. See also Chapter 8.

We conclude from the results of this Chapter that: the Managerial Saving Function is supported against the Life Cycle Hypothesis: or, what amounts to the same thing, there is no perfect substitution between corporate and personal sector savings.[14/] The decisions of the 'controlling group' on retentions do have a positive impact on financial capital accumulation.

SUMMARY

We tested the Managerial Saving Function and the Life Cycle Hypothesis, by use of postwar U.K. time series. We found no support for the perfect substitution hypothesis implied by the LCH, by use of: four different models of savings, two different definitions of the savings variable, and a host of explanatory variables. It was also shown that all four models can lead to a general form in which they can be nested as special cases. Such tests cast doubt on the validity of the simple Life Cycle model, and support the Managerialist Saving Function.

NOTES

1/ Albeit, they often disregard the latter's emphasis on the use of private income and savings as the appropriate variables. See e.g. Modigliani (1970, 1975). Spiro (1962) and Lambrinides (1972, 1974) are notable exceptions.

2/ For the role of the interest rate in consumption-saving functions see e.g. King (1984). Also Section 2 of this Chapter.

3/ If instead PSDI had a lag distribution on PRSA the coefficient of its one period lagged value should be positive.

4/ More complicated versions of (2) to 1.4 were tried but they did not improve the results. The lagged IR_t variable reduced the explanatory power of the equations. The lagged change of the PSDI variable as well as the two period lagged CORE variable failed to be significant at the 5% significance level.

5/ The adoption of a Distributed Lag (DL) model, was motivated by the findings of the SL model. A potential problem arising by the use of a DL model in the saving function is that, in general, a DL model implies coefficients higher in the long run than in the short run. This would imply a lower propensity to consume in the long run, in case the level of the disposable income variable is included in the regression: a property in stark contrast with widely held views and normal practice. It should be noted, however, that: this disturbing property does not hold if the change rather than the level of the disposable income variable is included in the regression: the idea that the impact of CORE and pension funds (see next Chapter) on PRSA will be higher in the longer run, is not inconsistent with the existing evidence (see Chapter 2): further the DL model was also adopted here in order to show that under assumptions, it can lead to an equation equivalent to the Life Cycle Hypothesis. See also Chapter 6, note 11.

6/ Given the findings of the SL model, the change of PSDI could also be included in (3); in two ways: as the PSDI, implying a concurrent impact of ΔPSDI on PRSA, or as CORE, implying a geometrically declining effect of ΔPSDI on PRSA. In the latter case the resulting specification gives rise to equation 2.2 (Table 2). In the former case the lagged ΔPSDI should also appear in the regression. Equations along these lines were estimated, but the lagged ΔPSDI was never significantly different from zero, so these results are not reported. Specification (3) was chosen here because it gives rise to 2.2, without the need to rely on the findings of the SL model.

7/ For the detection of autocorrelation we use the 10% significance level.

8/ In face of the LDV, the DW is not a useful detector of autocorrelation, but it is reported since, if significant, it is still a valuable indicator of misspecification. See Harvey, (1981), and Granger and Newbould, (1974).

9/ And similarly the IR variables: or alternatively, if it is assumed that their effects operate via the coefficient of the relevant explanatory variables. See next Subsection.

10/ Literally private disposable income (PRI) is defined as the sum of (after tax) corporate income plus personal sector disposable income. However, the national accounts define PSDI to include dividends, so to obtain PRI we simply have to add CORE to PSDI.

11/ But it also includes capital gains: which will not be expected to bias our results as the empirical studies available suggest. See Arena, (1964) and Bhatia, (1972). The definition used here is also adopted by Modigliani, (see note 2).

12/ We report ML estimates for this equation despite the insignificant, at the 10% level, coefficient of the ρ, to ensure comparability with its equivalent 3.4 of the LCH. The OLS results were similar. The lack of autocorrelation in this equation further highlights the inappropriateness of restricting the constant term to zero.

13/ We approximate the income of the unincorporated sector with the self employment income provided by the official statistics: and the retentions made by it, by assuming that it is the same proportion to the corporate sector's. The self employment income increased from 10.4% of PSDI in the 1963-1970 period, to 11.9% in the 1971-1981 period. For the same periods the increase of the CORE/PSDI ratio was more dramatic.

14/ Not that this would worry Modigliani and Ando (1957) a lot: as in their view, 'it is one of the merits of our model that it gives a person with the right kind of data so many opportunities to refute it'. (p. 123).

CHAPTER 6

The Effects of Life Assurance and Pension Funds on Other Savings : A Test of the Extended Managerialist Saving Function and the Galbraith-Marglin Hypothesis*

* This Chapter relies on, and extends ideas that first appeared in Pitelis (1984). An earlier version of this paper was presented at an Industrial Economics Workshop at Warwick. A version of the present Chapter was presented at the Econometric Society European Meetings, Madrid, 1984.

INTRODUCTION

In Chapter 2 we discussed the recent interest on the pension funds question, and the outflow of empirical work in the area purporting to test: the Life Cycle Hypothesis, and/or the effects of contractual savings on personal savings and aggregate capital formation. These are also the aims of this Chapter, but we also test: the extended MSF proposed in Chapter 4, and the Galbraith-Marglin hypothesis discussed in Chapter 2. To do that we need: to appropriately redefine our income and saving variables, as well as to appropriately extend the specifications used in the previous Chapter. In this Chapter we only focus on the SL, DL and LCH models, since, as was shown in Chapter 5, the LCH and the H-T models are derivable from each other with no further assumptions or loss of generality.

As we saw in Chapter 2,earlier U.K. findings rejected the substitution hypothesis. Most, in particular time series, studies though, are subject to various limitations: they focused on a very short period of time: made an uncritical use of the official data, that may cast doubt on their results: estimated consumption functions, which do not explicitly allow the testing of the effects of pension funds on other than personal savings, such as corporate retentions[1/]: finally, confined their attention to - in most cases - one specification of the consumption function.

The adjustments to the data undertaken in this Chapter, as well as the fact that we specify private (personal plus corporate) saving functions, and our coverage of the whole 1951-1981 U.K. period, results in solving all the above problems. Further, we test the sensitivity of the marginal 'propensity' to save to alternative definitions of disposable

income, (see also Taubman, 1968), and derive a general estimated saving function which is tested down to give us the equation that most parsimoniously describes our data. Against that, alternative hypotheses-specifications are tested.

In Section 1.1 we discuss the adjustments we undertake to the official statistics as well as the potential problems arising by failing to make these adjustments. In 1.2 we provide new empirical results. In Section 2 we have discussion and conclusions. The Appendix has a specification search.

1. TESTS OF THE LIFE CYCLE HYPOTHESIS, THE EXTENDED MANAGERIALIST SAVING FUNCTION AND THE GALBRAITH-MARGLIN HYPOTHESIS

1.1 The Treatment of Life Assurance and Pension Funds in the Official Statistics

The first issue to tackle before estimation is undertaken is to decide on the most appropriate definition of saving and disposable income. Although problems with the use of offical statistics are too well, and for too long (see e.g. Friend and Schor, 1959) known to need reiterating here, data availability or inertia has resulted in an uncritical use of the offical statistics by many studies. This, however, as recent discussion has shown (see Chapter 2) may entail serious costs. At least quantitatively the most serious problem arises from the treatment of Life Assurance and Pension Funds (TLAPF). Thus, contribution to TLAPF are included in the official definition of PSDI and since savings are estimated as a residual category, the official definition of personal sector savings (PSS) also includes such contributions.

For the purposes of the official compilers - i.e. to estimate

the net amount available for lending from one sector to the other, this treatment is correct. If one, however, is interested in estimating say, the propensity to save income actually in the disposal of the households or, for our purposes, the net effect of TLAPF, (see note 20) on private saving[2/] one needs to define income and saving net of contributions to TLAPF but inclusive of benefits paid by TLAPF to households,[3/] as only the latter are disposable to the consumers.[4/] The resulting series we name net personal disposable income (NPDI) and net personal savings (NPS) : the net inflow to TLAPF we name LAPF.

All time series studies surveyed in Chapter 2 explicitly recognise this problem. Browning (1982) makes no attempt to account for it. Feldstein (1978) suggests that his estimates refer to the 'net effect' of pension funds on PRSA. Threadgold (1978) goes further. He justifies the use of the uncorrected series in terms of the fact that - under plausible assumptions - it allows for distinguishing between employers and employees' degree of substitution. In the last paragraph of his paper he also estimates one regression with the corrected series. The result of this 'alternative approach' lends support to the add-on hypothesis.

In principle Feldstein's and Threadgold's claims are not unjustified. Their treatment, however, of PSDI and pension funds as two different and concurrent explanatory variables in the same equation may entail serious problems. For one the use of PSDI - i.e. NPDI plus LAPF - in itself is equivalent to restricting the coefficients of these two variables to be equal: which is the hypothesis under examination ! Further, one could question the importance one should attach to the estimated coefficients and their standard errors, since collinearity in such a case will be expected to be high.[5/]

The above, we think, raise some concern over the findings of all previous time series studies, except for Threadgold's 'alternative approach'. We pursue extensively this approach here but also make use of the uncorrected series in some regressions so as to assess the empirical validity of previous theorizing in our data framework.

1.2 The Empirical Results

In its simplest and most general form the hypothesis under examination can be written as:

$$PRSA_t = s(NPDI_t, LAPF_t, CORE_t, IR_t) , \qquad (1)$$

where s is assumed to be a linear functional form, and IR_t is the interest rate; t is a time subscript. For estimation purposes and including a constant term, the stochastic version of (1) can be written as:

$$PRSA_t = \alpha_o + \alpha_1 NPDI_t + \alpha_2 LAPF_t + \alpha_3 CORE_t + \alpha_4 IR_t + u_t$$

$$u_t = NID(O,\sigma^2) . \qquad (2)$$

Alternative hypotheses can be tested by focusing on α_2.[6/] The respective implications are:

Perfect Substitution	$\alpha_2 = O$
Imperfect Substitution	$O < \alpha_2 < 1$
Independence or Add-on	$\alpha_2 = 1$, and
Complementarity	$\alpha_2 > 1$.

1.2.1 The Simple Linear Model

The specification tested is a Simple Linear (SL). It involves estimating linear versions of (2) obtained by lagging in turn one or more of the explanatory variables by one period.[7] Its basic purpose is to avoid problems of dynamic specification inherent in more complicated models, but also to provide useful information as to the dynamic specification one should adopt. The simplest version that is econometrically acceptable is one that includes the lagged value of CORE in (2), and this equation is our starting point. Results from estimating the SL model are reported in Table 1. A total of 12 equations are reported which were considered to be useful for the hypotheses we examine. Other results are available from the author on request. Suffice it to say here that they support the same findings as the ones reported. All equations were originally estimated with Ordinary Least Squares (OLS) but they were found to suffer from first order autocorrelation and we used a Maximum Likelihood (ML) technique to remove it.[8] These ML estimates are reported. Below we summarise the underlying logic of the reported regressions and their results.

In Table 1, equation 1.1 is first estimated. This was obtained by imposing the restrictions $\alpha_1 = \alpha_2$ in (2). It results in an equation which involves the official definition of disposable income (PSDI) but not LAPF. It gives a Marginal 'Propensity' to Save (MPS) of 0.16 which is close to usually reported coefficients for this variable. It implies that the coefficient of LAPF is also 0.16. Equation 1.2 tests this restriction by simply splitting PSDI to NPDI and LAPF. This way the MPS net personal disposable income can also be tested. An F test rejects the restriction at the 10% level. The coefficient of NPDI is insignificant implying a MPS equal to zero. The coefficient of LAPF is insignificantly different

The Effects of LAPF on Other Savings in the Simple Linear Model

Dependent Variable PRSA : Annual Data 1951-1981 U.K.

EQN No	CONSTANT	$NPDI_t$	$NPDI_{t-1}$	$\Delta(NPDI_t)$	$PSDI_t$	$LAPF_t$	$LAPF_{t-1}$	$CORE_t$	$CORE_{t-1}$	$COSA_t$	$COSA_{t-1}$	IR_t	IR_{t-1}	$\hat{\rho}$	SSE	$\bar{R}^2$	DW
1.1	-6397.94* (-7.14)				0.16* (6.07)			0.89* (12.43)	0.21* (2.87)			222.44* (3.43)		0.57* (3.51)	530×10^{10}	0.9788	1.8864
1.2	-3617.69* (-2.87)	0.07 (1.57)				0.84* (2.61)		0.86* (12.17)	0.27* (3.69)			227.75* (3.43)		0.33x (1.76)	469×10^{10}	0.9909	1.8647
1.3	-3617.69* (-2.87)				0.07 (1.57)	0.78* (2.18)		0.86* (12.17)	0.27* (3.69)			227.75* (3.43)		0.33x (1.76)	469×10^{10}	0.9909	1.8647
1.4	-1710.04* (-4.98)					1.25* (6.36)		0.87* (11.86)	0.29* (4.06)			258.20* (3.96)		0.33x (1.79)	517×10^{10}	0.9903	1.8956
1.5	-4179.80* (-3.16)	0.24* (4.19)	-0.16* (-3.96)			0.60x (1.98)		0.87* (14.94)	0.25* (4.22)			304.82* (5.42)		0.58* (3.53)	291×10^{10}	0.9866	1.8363
1.6	-1837.81* (-4.96)			0.16* (3.81)		1.08* (6.28)		0.85* (14.19)	0.30* (5.31)			339.58* (6.10)		0.54* (3.27)	334×10^{10}	0.9876	1.8518
1.7	-1779.49* (-5.05)			0.20* (3.89)		0.80* (2.80)	0.45 (1.29)	0.85* (14.31)	0.26* (4.16)			308.06* (5.15)		0.50* (2.94)	313×10^{10}	0.9891	1.8531
1.8	-1806.05* (-5.78)			0.27* (5.47)			1.32* (5.78)	0.89* (13.90)	0.23* (3.27)			269.93* (3.89)		0.32 (1.67)	411×10^{10}	0.9924	1.9044
1.9	-1883.85* (-5.39)			0.17* (4.13)					0.31* (3.27)	0.90* (20.72)		362.06* (6.99)		0.56* (3.51)	350×10^{10}	0.9863	1.8451
1.10	-1823.13* (5.39)			0.19* (4.63)						0.86* (19.30)	0.28* (5.99)	323.49* (6.27)		0.53* (3.23)	316×10^{10}	0.9891	1.8655
1.11	-1858.89* (-4.57)			0.25* (4.79)						0.87* (20.07)	0.23* (4.13)	316.88* (6.33)	97.66 (1.63)	0.64* (4.26)	288×10^{10}	0.9842	1.6922
1.12	-2715.61* (-3.38)	0.21* (4.72)	-0.17* (-4.24)							0.83* (16.13)	0.25* (4.74)	294.07* (5.22)		0.51* (3.02)	299×10^{10}	0.9899	1.8256

Δ denotes the first difference of the relevant variable.

't' ratios in parentheses

* denotes significance at the 5% level

x denotes significance at the 10% level

from one, in a one tailed 't' test and supports the add-on hypothesis. The explanatory power of the equation is improved.

Equation 1.3 follows the 'orthodox' approach of including both PSDI and LAPF as concurrent explanatory variables. The result is that equation 1.3 reproduces exactly 1.2. The coefficient of PSDI drops and stands now as a perfect proxy to NPDI in 1.2: similarly the coefficient of LAPF falls. Since 1.1, 1.2 and 1.3 together can be viewed as a version of Frisch's Confluence Analysis,[9/] these findings can be fairly safely attributed to multicollinearity. In view of the latter's effects on the coefficients estimates and standard errors, 1.3 can be dismissed and along with it perhaps the validity of the 'orthodox' approach can be questioned, at least in our data framework. Equation 1.4 is equation 1.2 but NPDI is now set to zero. This restriction is not rejected.

With a MPS net personal disposable income equal to zero we can now test whether the change of NPDI affects PRSA. To do that we simply need to add the one period lagged NPDI as an additional explanatory variable to 1.3: a coefficient of $NPDI_t$ equal to minus the coefficient of $NPDI_{t-1}$, implying a marginal propensity to save NPDI equal to zero. The obtained equation is 1.5. The restriction is imposed in 1.6. An F test does not reject it at the 5% level. In 1.5 the coefficient of LAPF is significantly different from zero at the 10% level and insignificantly different from one at the 5% level. This supports the add-on. In 1.6 the relevant coefficient is highly significant and still supports the add-on at the 5% level.

In 1.7 the lagged value of LAPF is included. It is insignificantly

different from zero. Still it improves the explanatory power of the regression and lowers the sum of squared errors. When it is included to replace LAPF, in equation 1.8, it is strongly significant and also significantly higher than one at the 10% level of a one tailed 't' test. This suggests that the finding of 1.7 may simply be due to multicollinearity.

In equations 1,2, 1.3, 1.4, 1.5, 1.6 and 1.7 the coefficients of LAPF and CORE are very close to each other. It might be argued that a better explanation of the dependent variable could be obtained if they were restricted to be equal. Thus, in 1.9 we impose this restriction to 1.6. The resulting variable we call Contractual Saving (COSA). The restriction is accepted but the explanatory power of the equation is lowered. In face of the findings of 1.8 we impose to 1.7 two restrictions. That the coefficient of LAPF is equal to that of CORE and that the coefficient of $LAPF_{t-1}$ is equal to that of $CORE_{t-1}$. This results in 1.10. This equations' explanatory power is an improvement over 1.9 and 1.6 and is as high as in 1.7: the restriction is accepted at the 5% level.[10/]

Equation 1.11 is equation 1.10 but also includes the lagged interest rate variable. This fails to be significantly different from zero, and leads to a reduction of the explanatory power of the equation. If in view of that we restrict it to be zero 1.10 obtains again. An F test supports the restriction at the 5% level. The final equation of the SL model is 1.12. In this equation the restriction that the coefficient $NPDI_t$ is equal to minus the coefficient of $NPDI_{t-1}$ is relaxed, in order to be subjected to a test in the preferred equation, 1.10. As it can be seen the restriction is now accepted at the 5% level of an F test, implying again a marginal propensity to save NPDI equal to zero: 1.12, has a

higher explanatory power, than 1.10.

In all equations 1.9, 1.10, 1.11 and 1.12 COSA have very high coefficients but fail to be equal to one, supporting some imperfect substitution (of the order of 15%) in one period. When, however, the effects of the lagged COSA are also added to those of $COSA_t$, this ceases to be the case and the add-on hypothesis is again supported.

In brief, the central findings of the SL model are that: the MPS net personal disposable income is zero: the change of NPDI plays a significant role in explaining PRSA, and similarly the interest rate, IR_t: that LAPF add-on to PRSA, and finally that the idea that LAPF and CORE have the same lag distribution cannot be rejected.

1.2.2 The Distributed Lag Model

Given the findings of the SL model and disregarding at the moment the interest rate, we can rewrite (1) as:

$$PRSA_t = s(LAPF_t, CORE_t). \qquad (1')$$

Then the equation,

$$PRSA_t = \beta_o + \beta_1 LAPF_t + \beta_2 CORE_t + \beta_3 PRSA_{t-1} + \varepsilon_t \qquad (2')$$

$$\varepsilon_t = u_t - \lambda u_{t-1} ,$$

will be consistent with a geommetrically declining lag/Koyck transformation type of model. See Chapter 5.[11/] Equation (2') is also consistent with a simple lag model of savings. The difference in the last case is that, in contrast to (2') where the error term is first order moving average

(MA1) of the original (white noise) errors, the error term will now be uncorrelated. Since significant λ's in (2') will render Ordinary Least Squares (OLS) estimates, biased and inconsistent, we will follow in this Chapter too, the procedure described in Chapter 5.

On estimation (2') gave:

$$PRSA_t = \underset{(-4.26)}{-1263.59^*} + \underset{(4.98)}{1.20^*}\ LAPF_t + \underset{(12.00)}{0.90^*}\ CORE_t + \underset{(4.90)}{0.27^*}\ PRSA_{t-1}$$

$$+ \underset{(0.31)}{0.06}u_{t-1} + \varepsilon_t \qquad \bar{R}^2 = 0.9933 \quad DW = 1.8061 \quad SSE = 860x10^{10}.$$

In terms of explanatory power (2') is an improvement over the SL model. Including the NPDI variable concurrently in the DL model, as implied by our finding in the SL model, results in an equation that includes both NPDI and lagged by one period NPDI, as explanatory variables. See Chapter 5. On estimation this equation resulted in the coefficients of the $NPDI_t$ and $NPDI_{t-1}$ variables being very close to each other. This finding would suggest that Δ(NPDI) may be the appropriate explanatory variable implying a MPS equal to zero. This is in line with the earlier findings by use of the SL model. Imposing the restriction we obtain 2.1 in Table 2.[12/] An F test accepts the restriction at the 5% level. The explanatory power of the equation improves and the SSE is reduced. The coefficient of LAPF is positive and significant, and gives support to the add-on.

In equations(2') and (2.1) the coefficients of CORE and LAPF are very close to each other. In 2.2, therefore, we restrict them to be equal. The restriction is accepted. 2.3 is 2.1 but also includes the interest rate. Similarly 2.4 is 2.2 with the interest rate added. In here too, the restriction that the coefficients of LAPF and CORE are equal

TABLE 2.

The Effects of LAPF and COSA on Other Savings in the Distributed Lag Model

Dependent Variable : PRSA: Annual Data 1951 - 1981 U.K.

Eqn.No.	Constant	$\Delta(NPDI_t)$	$LAPF_t$	$CORE_t$	$COSA_t$	$COSA_{t-1}$	IR_t	IR_{t-1}	$PRSA_{t-1}$	$\hat{\rho}$	SSE	$\bar{R}^2$	DW
2.1	-1450.52* (-6.07)	0.26* (4.08)	0.73* (3.25)	0.82* (13.17)					0.41* (7.37)	0.09 (0.47)	493×10^{10}	0.9958	1.8421
2.2	-1420.88* (-6.41)	0.25* (4.37)			0.81* (14.33)				0.40* (9.57)	0.10 (0.51)	496×10^{10}	0.9960	1.8292
2.3	-1600.38* (-6.13)	0.28* (6.74)	0.59* (3.14)	0.88* (17.81)			271.75* (5.40)		0.29* (6.94)	0.43* (2.42)	240×10^{10}	0.9937	2.0015
2.4	-1507.74* (-5.73)	0.26* (6.55)			0.84* (20.01)		260.29* (5.15)		0.26* (6.94)	0.45* (2.53)	261×10^{10}	0.9931	1.8937
2.5	-1662.50* (-5.28)	0.31* (5.58)	0.55* (2.91)	0.90* (15.85)			281.02* (5.58)	49.67 (0.70)	0.26* (3.14)	0.52* (3.03)	236×10^{10}	0.9912	1.9727
2.6	-1480.36* (-5.77)	0.25* (4.93)			0.83* (18.76)		255.55* (4.92)	-27.01 (-0.41)	0.28* (5.31)	0.39* (2.12)	260×10^{10}	0.9940	1.9209
2.7	-1426.97* (-4.58)	0.25* (4.23)			0.83* (18.29)	-0.03 (-0.23)	248.52* (4.51)	-41.13 (-0.58)	0.31* (2.36)	0.35x (1.83)	260×10^{10}	0.9945	1.9247
2.8	-1516.35* (-4.90)	0.26* (5.18)			0.84* (19.60)	-0.01 (-0.06)	261.18* (4.86)		0.25* (2.34)	0.45* (2.49)	261×10^{10}	0.9929	1.8928

Δ denotes the first difference of the relevant variable.
't' ratios in parentheses

* denotes significance at the 5% level
x denotes significance at the 10% level

is accepted. 2.5 allows a different lag distribution for the IR variable, a treatment consistent with the Koyck transformation model, which results in the lagged IR variable being introduced in the equation. 2.6 results from a same treatment of 2.4. In 2.5 and 2.6 the lagged IR variables are insignificantly different from zero. When dropped 2.3 and 2.4 result again, and the restriction that they are equal to zero is accepted, at the 5% level of an F test.

In 2.3 and 2.5 the coefficients of LAPF support the imperfect substitution hypothesis. When their coefficients are restricted to be equal to the coefficients of CORE, the restrictions are accepted. The resulting contractual saving (COSA) variable always gives support to limited substitution.

The last two equations in Table 2, are 2.7 and 2.8. They are as 2.6 and 2.4 respectively, but allow a different lag distribution for the COSA variable. The results support all earlier considerations. Important, however, is that 2.8 is effectively a restricted version, and constitutes a test of, the Life Cycle Hypothesis, (LCH), subject to the exclusion of the IR variables.

1.2.3. The Life Cycle Hypothesis

As it has been shown in the last Chapter, the LCH can be written as:

$$PRSA_t = \gamma_1 \Delta(PRI_t) + \gamma_2 PRSA_{t-1} + \varepsilon_t \qquad (3)$$

$$\varepsilon_t = u_t - \lambda u_{t-1} \ ,$$

where the effects of the interest rate are taken to operate via the LDV

TABLE 3

The Life Cycle Hypothesis and the Effects of COSA on Other Savings

Dependent Variable : PRSA : Annual Data 1951-1981 U.K.

qn No.	Constant	$NPDI_t$	$NPDI_{t-1}$	$\Delta(NPDI_t)$	$COSA_t$	$COSA_{t-1}$	$\Delta(COSA_t)$	$\Delta(PRI_t)$	$PRSA_{t-1}$	$\hat{\rho}$	SSE	$\bar{R}^2$	DW
.1	-1384.46^x (-1.92)	0.27* (4.00)	-0.26* (-3.20)		0.81* (12.07)	-0.10 (-0.47)			0.44* (2.59)	0.09 (0.43)	468×10^{10}	0.9950	1.860
.2	-1245.58* (-4.42)			0.28* (4.29)	0.83* (13.99)	-0.17 (-1.01)			0.52* (4.24)	0.11 (0.55)	477×10^{10}	0.9960	1.778
.3	-457.60^x (-1.78)			0.45* (7.03)			0.81* (10.94)		1.00* (66.93)	0.15 (0.71)	787×10^{10}	0.9936	1.5681
3.4	-535.20^x (-1.82)							0.61* (13.57)	1.00* (58.06)	0.17 (0.87)	109×10^{11}	0.9915	1.6048

Δ Denotes the first difference of the relevant variable.

't' Ratios in parentheses.

* Denotes significance at the 5% level.

^{x} Denotes significance at the 10% level.

and where PRI represents private income: i.e. NPDI plus COSA. Equation (3) can also be written as:

$$PRSA_t = \delta_1 NPDI_t + \delta_2 NPDI_{t-1} + \delta_3 COSA_t + \delta_4 COSA_{t-1}$$

$$+ \delta_5 PRSA_{t-1}, \qquad (3')$$

implying that $\delta_1 = -\delta_2 = \delta_3 = -\delta_4 = \gamma_1$ and $\delta_5 = \gamma_2$. By estimating (3') with a constant term[13/] we obtain equation 3.1 in Table 3. In 3.2 we restrict δ_1 and δ_2 to be equal and the restriction is accepted. Lagged COSA, however, is always very small quantitatively and insignificantly different from zero. As a result when in 3.3 we restrict δ_3 and δ_4 to be equal the restriction is rejected easily. This is also the case when the most restricted version of the LCH, i.e. (3) is estimated in 3.4.

The conclusion from the above is that the simple LCH is easily rejected by the data. As in the SL and DL models the restriction that the coefficients of $NPDI_t$ and $NPDI_{t-1}$ are equal, is accepted, but this is not the case for $COSA_t$ and $COSA_{t-1}$. This implies that COSA have a differential impact on PRSA, not captured via the coefficient of Δ(PRI). This would suggest that an extension of (3) to include COSA might be an interesting attempt to rescue the simple version of the LCH. This extended LCH, which follows Feldstein (1978), on estimation gave:

$$PRSA_t = \underset{(4.96)}{-1118.93^*} + \underset{(4.45)}{0.29^*}\ \Delta(PRI_t) + \underset{(5.65)}{0.56^*}\ COSA_t + \underset{(8.02)}{0.59^*}\ PRSA_{t-1}$$

$$+ \underset{(0.53)}{0.10}u_{t-1} + \varepsilon_t \qquad (4)$$

$$\bar{R}^2 = 0.9961 \qquad DW = 1.7533 \qquad SSE = 488 \times 10^{10}\ .$$

Important about (4) is that it performs slightly better in terms of explanatory power than its respective 2.2 of the DL model and 3.2 of the unrestricted LCH model.[14/] The problem, however, is that in so doing we obtain an equation hardly different from the unrestricted simple LCH, and the DL model. To see that one simply has to split Δ(PRI) in (4) as in (3'), and obtain:

$$PRSA_t = \zeta_1 \Delta(NPDI_t) + \zeta_2 COSA_t + \zeta_3 COSA_{t-1} \qquad (5)$$

$$+ \zeta_4 COSA_t + \zeta_5 PRSA_{t-1} ,$$

where the differences from (3') is that $\delta_1 = -\delta_2 = \zeta_1$ (following the findings of 3.1) and δ_3 in (3') is equal to $\zeta_2 + \zeta_4$ in (5). In view of the findings of 3.2, (5) can also be written as 2.2. That is, for estimation purposes the extended LCH is hardly different to the unrestricted simple LCH or to the DL model.[15/] It follows that the findings of the DL model in Table 2 can also be viewed as tests of the simple and extended LCH, and imply that the simple LCH is rejected while the extended is not, but it also needs to be further extended to account for the differential impact of the interest rate on private savings. On balance, the coefficients of COSA in the LCH support limited substitution.

Another interesting finding of the DL model and the LCH is the possibility of deriving Long Run (LR) elasticities of the LAPF, CORE and COSA variables by dividing their coefficients by one minus the coefficient of the LDV.[16/] These elasticities are summarised in Table 4.

In general, long run elasticities are higher, and in many cases significantly higher than one, giving support to the complementarity

TABLE 4

Implied Long Run Elasticities in the DL and LCH Models

Equation Number	LAPF	CORE	COSA
(2')	1.56*	1.17	-
2.1	1.24	1.39*	-
2.2	-	-	1.35*
2.3	0.83	1.24*	-
2.4	-	-	1.17*
2.5	0.74	1.22	-
2.6	-	-	1.15*
2.7	-	-	1.20*
2.8	-	-	1.12*
3.1	-	-	1.45*
3.2	-	-	1.73*
(4)	-	-	1.37*

* Denotes significance at the 5% level of a one tailed 't' test.

hypothesis. This observation is in line with early U.S. and most U.K. cross section findings. This provides a potential means of reconciling the divergence between time series and cross section results in terms of the well known fact that the former are more appropriate for testing short and medium run substitution, while the latter account for the longer run.[17/]

2. DISCUSSION AND CONCLUSIONS

As regards our treatment of the IR[18/] and CORE variables as well as econometric issues, the same considerations apply in this Chapter as in Chapter 5, and we do not repeat them here.

An additional issue in this Chapter is raised by our treatment of TLAPF. In Chapter 2 the theoretical arguments were developed in terms

of corporate pension funds only: i.e. no reference was made to life assurance funds. Regarding the substitution issue and the identification of the true MPS of households, excluding all LAPF from income and saving is appropriate, since the net inflow to life assurance funds too is not available for consumption: i.e. truly disposable. For the purposes of our testing the extended MSF, however, it would be closer to our theoretical analysis, if life assurance funds and pension funds could be identified separately.[19/] This was not possible due to data availability. Observing the close similarity, however, between the two types of funds, we can think of no serious reason why, our treatment should bias our results in a direction unfavourable to the discussion of Chapter 2.

Given the above, the conclusions that can be drawn from this Chapter are: we found support for the extended MSF, but not for the MSF or the simple LCH. Alternatively we supported the idea that pension funds too, as well as corporate retentions and consequently contractual savings as a whole, do not substitute perfectly with net personal saving, and may very well add-on, on a one to one basis, on other saving. Further, we found support for the Galbraith-Marglin hypothesis[20/]. Thus we can conclude that the 'controlling group's'policies on retentions and pension funds do induce a flexibility to the aggregate proportion of income saved. These conclusions are also verified from the specification search followed in the Appendix.

SUMMARY

We tested the extended MSF against the MSF and the LCH, by use of post-war U.K. data. We found support for the extended MSF. Alternatively, no support was found for the idea that pension funds and corporate retentions will substitute perfectly with net personal saving and between

each other.

APPENDIX TO CHAPTER 6

SPECIFICATION SEARCH

The purpose of this appendix is twofold. First to start from a general specification encompassing both the DL and LCH and test down to find the preferred equation. Second to test for the possibility that the often uncomfortably high $\bar{R}^2$'s in our previous results are due to trend rather than the explaining power of the models - regressors used.

We can write the general equation as:

$$PRSA_t = \theta_o + \theta_1 \Delta(NPDI_t) + \theta_2 LAPF_t + \theta_3 LAPF_{t-1} + \theta_4 CORE_t$$

$$+ \theta_5 CORE_{t-1} + \theta_6 IR_t + \theta_7 IR_{t-1} + \theta_8 PRSA_{t-1} + \varepsilon_t \qquad (A.1)$$

$$\varepsilon_t = u_t - \lambda u_{t-1} .$$

(A.1) is consistent with the DL model in its general form and encompasses the LCH as a special case. To account for trend and ensure stationarity of the series (A.1) was subject to first differencing. To the obtained equation a constant term was added to mean correct the series. Given the resulting second differences in a few cases, these equations were estimated for the 1950-1981 period to ensure thirty effective observations. For the last two reasons the obtained results are not strictly comparable to the previous ones, but we think of no serious reason to suspect that such small differences would lead to any significant changes in our findings.

The estimated version of the general equation is 5.1 in Table 5. Both lagged LAPF and CORE in 5.1 are insignificantly different from zero. In 5.2 they are restricted to zero, which restrictions are easily accepted at the 5% level of an F test. The explanatory power of the equation improves. In 5.1 and 5.2 the coefficients of LAPF and CORE are very close to each other. In 5.3 we restrict them to be equal. The restriction is accepted and there is further improvement in the explanatory power of the equation. Equation 5.4 is the unrestricted version of the simple LCH, (3') or alternatively version (5) of the extended LCH. It arises by imposing equality restrictions to 5.1 for both current and lagged LAPF and CORE. It can be seen that although the restrictions are accepted and the explanatory power of the equation is higher as compared to 5.1, the coefficient of the lagged COSA variable is insignificant. When set equal to zero we obtain 5.3 again. The restriction is accepted and the explanatory power is higher.

It can be seen that 5.3 is the best equation. It is consistent with the DL model, but rejects the simple LCH implications. The contractual saving coefficient is equal to one supporting the add-on hypothesis. Similarly in 5.1 and 5.2 the coefficients of LAPF are equal to one. As compared to our previous findings the only important difference is the significant lagged IR variable. This would suggest some collinearity problems in the levels specifications. It is also important to note that none of the equations up to this point suffered from first order autocorrelation while the explanatory power of the equations is surprisingly high, despite the de-trending via differencing.

From the last four equations reported 5.5 and 5.6 are as 5.3 and 5.4 respectively, but both interest rate variables are now set equal to

TABLE 5.

Specification Search and the Effects of LAPF and COSA on Other Savings

Dependent Variable : PRSA : Annual Data 1950 - 1981 U.K.

EQN No	CONSTANT	$\Delta^2(NPDI_t)$	$\Delta(LAPF_t)$	$\Delta(LAPF_{t-1})$	$\Delta(CORE_t)$	$\Delta(CORE_{t-1})$	$\Delta(COSA_t)$	$\Delta(COSA_{t-1})$	$\Delta^2(COSA_t)$	$\Delta^2(PRI_t)$	$\Delta(IR_t)$	$\Delta(IR_{t-1})$	$\Delta(PRSA_{t-1})$	$\hat{\rho}$	SSE	$\bar{R}^2$	DW
5.1	-150.43	0.37*	0.84*	-0.04	0.96*	-0.05					281.98*	203.28*	0.28x	-0.28	255×10^{10}	0.9594	2.1504
	(-1.50)	(2.84)	(2.41)	(-0.01)	(15.30)	(-0.31)					(5.43)	(2.25)	(1.95)	(-1.36)			
5.2	-147.82	0.36*	0.88*		0.96*						216.38*	189.00*	0.17*	-0.27	256×10^{10}	0.9628	2.0775
	(-1.55)	(7.33)	(3.06)		(17.44)						(3.89)	(2.38)	(2.98)	(-1.31)			
5.3	-162.90*	0.36*					0.96*				285.69*	213.72*	0.24*	-0.05	257×10^{10}	0.9642	2.0688
	(-2.10)	(7.63)					(17.30)				(6.70)	(2.67)	(4.95)	(-0.23)			
5.4	-167.34*	0.36*					0.96*	-0.03			282.42*	212.76*	0.26*	-0.08	256×10^{10}	0.9627	2.1002
	(-2.04)	(6.57)					(16.87)	(-0.21)			(6.11)	(2.60)	(2.02)	(-0.41)			
5.5	-52.99	0.27*					0.94*						0.41*	-0.19	780×10^{10}	0.8972	2.2389
	(-0.46)	(4.95)					(13.10)						(6.16)	(-1.03)			
5.6	-108.87	0.34*					0.95*	-0.29					0.68*	-0.19	730×10^{10}	0.9024	2.3021
	(-0.93)	(4.87)					(13.53)	(-1.54)					(3.70)	(-0.98)			
5.7	-189.14	0.49*							0.88*				1.21*	-0.20	105×10^{11}	0.8647	2.3742
	(-1.41)	(8.17)							(11.15)				(11.51)	(-1.07)			
5.8	-99.95									0.63*			1.08*	-0.31x	156×10^{11}	0.8402	2.2554
	(-0.79)									(11.54)			(10.47)	(-1.75)			

Δ denotes the first differences of the relevant variable. *denotes significance at the 5% level.

Δ^2 denotes the second difference of the relevant variable. x denotes significance at the 10% level.

zero. Obviously these restrictions are rejected but the task was undertaken in order to test the various more restricted versions of the pure simple LCH or DL models against the more general version of the LCH, (3'). It can be seen that lagged COSA is still not significantly different from zero, and setting it to zero results in 5.5: the restriction is still not rejected at the 5% level although the explanatory power of the equation is now lower. Setting, however, $\delta_2 = -\delta_3$ in (3') results in 5.7 and this restriction is clearly rejected. When the most restricted versions of the simple LCH (3) is estimated, it results in 5.6. The implied restrictions are profoundly rejected, and the equation exhibits significant (at the 10% level) first order autocorrelation. The explanatory power of the equation falls too.

NOTES

1/ A notable exception is Feldstein (1978), for the U.S.

2/ For other purposes too, like the 'personal saving paradox', (see Chapter 2), or our expectations on the effects of saving on recovery. See Rose, (1983).

3/ Which is also the official treatment in the case of Social Security. See Pearce and Thomas, (1981).

4/ This would have no effect on our series if contributions were equal to benefits, i.e. if LAPF was zero. This, however, was never the case in the postwar U.K., the net inflow being always positive and close to around 50% of the total contributions to the funds: which makes the correction indispensable.

5/ This is also recognized by Threadgold (1978).

6/ And/or on α_3 if one wants to test the effects of CORE on PRSA too: i.e. the MCSF.

7/ More lags were tested but they were found not to differ significantly from zero at the 5% significance level.

8/ Equation 1.8 marginally failed to exhibit significant auto-correlation at the 10% level. Still we report ML estimates to ensure consistency with the other equations. The OLS estimates were essentially the same.

9/ A method proposed by Koutsoyiannis (1977).

10/ The same findings were obtained when PRSA were simply regressed to $LAPF_t$, $LAPF_{t-1}$, $CORE_t$ and $CORE_{t-1}$, and then the relevant restrictions were imposed. These equations, moreover, did not exhibit autocorrelated residuals. These results are available on request.

11/ As explained in Chapter 5, note 5, a DL model on LAPF and CORE is also consistent with the existing empirical evidence. Further, when augmented to include ΔNPDI the DL model satisfies this interesting property: a zero long run propensity to save NPDI along with a higher long run than base year, elasticity for CORE and LAPF. This solves the potential problem of the DL model noted in Chapter 5, note 5, and it is also consistent with the existing evidence. See also note 17.

12/ (2.1) could also be obtained if ΔNPDI was assumed to have a geometrically declining lag distribution as PRSA similar to that of LAPF and CORE. If, instead, ΔNPDI was allowed to affect PRSA concurrently, its lagged value would appear in the regression. Equations along these lines never gave rise to significant coefficients of the lagged ΔNPDI variable, so these results are not reported. See also note 6, Chapter 5.

13/ The LCH requires estimation without the constant, which we include for statistical purposes: i.e. to mean correct our series. Estimation of the equations in Table 3 without the constant resulted in inferior equations in terms of auto-correlation and misspecification as judged by the DW. An F test accepted the exclusion only once, (in 3.4).

14/ It also performs better than its respective extended version which includes CORE only; in Chapter 5.

15/ Which supports earlier theorizing by Marglin (1975) and Green (1979).

16/ In case the lagged value of the relevant variable is included in the equation, this is modified to read: the coefficient of the relevant variable plus or minus the coefficient of its lagged value, by one minus the coefficient of the LDV.

17/ The important difference between the DL and the LCH models arises from the fact that the former implies a higher LR elasticity for CORE and LAPF than its respective SR. In contrast the LCH implies a LR elasticity for CORE and LAPF equal to zero. In that sense the LCH is in stark contrast to the existing evidence, and especially so, the cross section one.

18/ Different results to ours for the U.S. are reported in Weber (1970). Other U.S. studies are surveyed in Howrey and Hymans (1978). Some U.K. studies are surveyed in Arestis and Driver (1980). The general picture appears to be one of inconclusiveness. In this Chapter as in the previous one, we reestimated our regressions by using a real interest rate (RIR) series, (see Data Appendix). Qualitatively the same results were obtained. When, for example, equation 2.3 (Table 2) was estimated with a real interest rate series, it gave:

$$PRSA_t = \underset{(-6.80)}{-2493.33^*} + \underset{(4.82)}{0.26^*}\,\Delta(NPDI_t) + \underset{(4.28)}{0.81^*}\,LAPF_t$$

$$+ \underset{(15.36)}{0.80^*}\,CORE_t + \underset{(3.39)}{0.83^*}\,RIR_t + \underset{(8.82)}{0.42^*}\,PRSA_{t-1}$$

$$+ \underset{(0.44)}{0.09}\,u_{t-1} + \varepsilon_t$$

$$\bar{R}^2 = 0.9971 \quad DW = 1.8201 \quad SSE = 333^*10^{10} .$$

19/ In fact it can be argued that the life assurance funds bear a close similarity to retentions arising from direct (voluntary) shareownership: as ex-ante they are both voluntary.

20/ Together these observations imply that an increase of LAPF by say £1 will increase private savings by exactly £1. While a Marginal Propensity to Save net personal disposable income of, say, 0.16 would imply a net addition to the savings pool of 84 pence.

CHAPTER 7

Saving out of Profit and Wage Income : Tests of the neo-Keynesian Saving Function and Related Hypotheses*

* This Chapter relies on and extends ideas and findings first appeared in Pitelis (1983).

INTRODUCTION

The purpose of this Chapter is to test the neo-Keynesian Saving Function and in particular the 'Kaldorian' hypothesis, in the light of the analysis and results of Chapters 4 and 6. This involves identifying appropriate income shares out of net personal disposable income, and then imputing pension funds to wage income and corporate retentions to profit income. All the other versions of the saving function examined and/or proposed in Chapter 4, are also tested in this Chapter.

Three issues are worth being reminded of: (i) the Kaldorian argument that retention of profit justifies a higher 'propensity' to save profit income is no longer necessarily true, in the face of compulsory pension funds schemes, even assuming zero substitution between retentions and personal savings: (ii) obtained coefficients are not propensities but corporate saving on behalf of each group plus each group's true propensities, and/or disequilibrium savings: (iii) from the host of existing empirical studies on this issue, only Klein (1950), Modigliani and Tarantelli (1975) and Pitelis (1982a) can claim to have tested the 'Kaldorian' hypothesis consistently:[1/] all other studies have focused on 'propensities' out of personal sector income only. The evidence of these three studies for U.S., Italy and U.K., suggests that around one third of wage income and three fourths of profit income is saved.

In Section 1 we expound our views on the 'appropriate' definition of disposable profit and wage shares. Section 2 has empirical results. In Section 3 we discuss and conclude.

1. ON THE DEFINITION OF DISPOSABLE SHARES

Defining disposable income shares is a difficult task, both theoretically and in terms of data availability. In Chapter 4 we argued that from the point of view of the ultimate beneficiaries, pension funds could be viewed as wage income while corporate retentions as profit income. This, should be noted, appears to be closer to the Pasinettian viewpoint rather than to a Kaldorian. In practice, however, the very fact that pension funds earn profit income, and the existing state of data availability blurs the distinction and makes anything short of rough approximations next to impossible.

As we have seen in Chapter 4, most existing studies have focused on personal sector income shares only. The normal practice was to define disposable wage income as after tax employment income: i.e. employers contributions, wages plus salaries, and forces pay. Disposable profit income was defined as income from dividends, rent, interest and self employment, after tax. This treatment, however, involves the problem that personal sector disposable income is not exhausted, as contributions from the central government are left unclassified. As we saw in Chapter 4, some studies have chosen to identify such contributions as a separate income category, (e.g. Surrey, 1970).[2/]

In principle, none of these practices is wrong or correct on a priori grounds. To say that, one needs to have firstly specified one's aims. In case one is interested to test in what proportion different types of income are saved, any possible subdivision will do. In case, however, one is interested in testing the idea that two different types of income are saved in a different proportion, then one needs to identify

contributions from central government with one type of income, or income receiver. For the purposes of this Chapter it appears prudent to impute contributions from central government to wage income, as it is largely to wage earners that such contributions are paid,[3/] constituting what is often called the 'social wage'.

The most serious problem, however, in the usual definitions of personal sector wage income arises from the fact that wages and salaries are defined in the official statistics gross of contributions of employees to life assurance and pension funds. Further, employers contributions are also defined to include contributions to these funds. Thus wage income includes all contributions to TLAPF, instead of the benefits only. With less than perfect substitution between contributions minus benefits to TLAPF and the rest of wage income, such treatment is bound to inflate the proportion of wage income 'saved'. More importantly, however, such a treatment blurs the distinction between income type or income receiver: as by imputing all contributions to TLAPF to wage income, the implicit classification is one of the ultimate beneficiaries, that is income receivers. However, by imputing at the same time the profit income earned by the funds (i.e. dividends, rent, interest and the ownership claims of the funds to retained income) to profit income, the distinction becomes one of type of income.

In order to satisfy our suggestion that pension fund income could be imputed to wage earners income, what we would need, for the purposes of this Chapter, is to impute all property income (received or retained) by the TLAPF to wage income. The data, however, on dividends, rent and interest received by TLAPF are only confined to the 1971 onwards period, while the identification of the part of retentions 'owned' by the

TLAPF, is not possible as data on that do not exist. As a result, in this Chapter too, we impute all contributions to TLAPF to wage income, but profit income earned by the TLAPF is imputed to the rest of profit income, and similarly corporate retentions are left with the rest of corporate retentions.

As noted, the problem with the above treatment will be that it will test a hybrid of the Pasinettian and Kaldorian versions of the NKSF, but neither of them exactly. With regard to our suggestions in Chapter 4, this treatment will have no effect on the 'propensities' to save out of net personal disposable income shares, if the latter are zero, but it will bias downwards the proportion of income saved out of the aggregate wage share as corporate retentions of TLAPF will not be imputed with (the rest of) wage income. This bias will tend to strengthen and/ or offset other biases to which we will soon refer.

The outcome of the above discussion is the following: wage income (WI) is defined as:[4/]

$$WI = (W+S) + FP + EC + CSG - WTAX - WCSS ,$$

where (W+S) = Wages and salaries, including contributions to TLAPF

FP = Forces pay,

EC = Employers contributions, including contributions to TLAPF,

CSG = Contributions from central government,

WTAX = Taxes paid out of wage income, and

WCSS = Contributions to social security out of wage income.

Net Wage Income (NWI) is defined as:

$$NWI = WI - LAPF ,$$

where LAPF = Net inflow in Life Assurance and Pension Funds .

Profit income (ΠI) is defined as:

$$\Pi I = DIV + CORE + RE + INT + SEY - \Pi TAX - \Pi CSS ,$$

where DIV = dividends,

CORE = retentions,

RE = rent

INT = interest

SEY = income from self employment,

ΠTAX = taxes paid out of profit income, and

ΠCSS = contributions to social security out of profit income.

Net profit income (NΠI) is:

$$N\Pi I = \Pi I - CORE .$$

On aggregate ΠI plus WI exhaust disposable private income (PRI), while NΠI plus NWI exhaust net personal disposable income (NPDI), leaving LAPF plus CORE to the corporate sector.

The above definitions are not free of criticisms other than the ones already discussed. First, ΠI is overestimated, since it includes all SEY. In practice, only a part of SEY is profit income, the rest being an imputed wage of e.g. owners of unincorporated businesses, and other self employed persons. Second, WI is overestimated too, since it includes in it all salaries. In practice, it might be argued that a proportion of, or even all salaries, are in fact profit income. See e.g. Cowling (1982)[5/]. Minor quantitative problems arise also from our classification of all

CCG, as wage income. In practice some parts of CCG such as rebates to employers from redunancy funds and/or grants to universities are not as easily classifiable as the rest of CCG. Further, a problem related to the issue of salaries above, arises from the fact that the contributions to and/or benefits from TLAPF of the salariat are also included to WI or NWI respectively.

In principle it is possible to approximate the wage income part of SEY. See e.g. Modigliani, (1970) and Hacche, (1979). The assumptions involved, however, would make the result of such an attempt suspect. On the other hand, to find the part of salaries that it is actually profits is impossible since data on that are not readily available.

The above problems are of no significance if as suggested in Chapter [4], and as implied by most existing evidence, the proportions of personal sector income shares saved are equal or close to each other. In such a case the remaining biases are just two. The part of TLAPF that belongs to the profits part of salaries, and the part of retentions that belongs to TLAPF and ultimately to wage income. Fortunately, these two biases are of opposite direction, and they will tend to cancel out.

It is evident, we think, from the above, that the problems involved are sufficient to defy any claim that the 'true' proportions of income shares saved can be obtained. We believe, however, that given the existing problems, the distinctions suggested above are perhaps the best we can get. Subject to these qualifications, we examine in the next Section the econometric evidence.

2. TESTS OF THE NEOKEYNESIAN SAVING FUNCTION AND RELATED HYPOTHESES

The econometric framework adopted in this Chapter, is the same

as the one in Chapter 6: since as we have explained, testing our suggestions on the proportions of disposable income shares saved, simply involves imposing and/or relaxing relevant restrictions in the models - equations of Chapter 6. Thus, in Table 1 we summarize the results obtained from following the above procedure in the SL model, while Table 2 has results obtained from the DL and LCH models.

In Table 1, equations 1.1, 1.2, 1.3 and 1.4 test our proposed extended version of the MSF or what we alternatively called the MCSF, in the exact form (13) in Chapter 4. Evidently at the same time we test again the effects of LAPF, COPE and COSA on PRSA. We observe that all previous suggestions are supported from these equations. In 1.2 the 'true' propensity to save both NΠI and NWI is zero, implying that wage earners save only through pension funds, and profit income earners through retentions. The last two add-on and substitute imperfectly respectively with PRSA. Equation 1.2 is imposing on 1.1 the restriction that the coefficients of LAPF and CORE are equal. The restriction is accepted. The COSA variable supports imperfect substitution. Regarding propensities, all previous considerations apply. Equations 1.3 and 1.4 are as 1.1 and 1.2 respectively, but include the interest rate, which is positive and significant. All previous considerations are the same.

Equation 1.5 allows for disequilibrium saving on the part of NWI and NΠI: by introducing their one period lagged values in 1.4, an equation that constitutes an unrestricted version of 1.12 in Chapter 6. Similar results are found. The implicit restriction in 1.12 Chapter 6, that disequilibrium saving proportions out of NΠI and NWI are equal, is accepted.

Equations 1.6 and 1.7 test Cowling's version of the MSF, by

Savings out of Wage and Profit Income in the Simple Linear Model :

Dependent Variable PRSA:

Annual Data 1951 - 1981 U.K.

Eqn. No.	Constant	NWI_t	WI_t	$N\Pi I_t$	ΠI_t	NWI_{t-1}	$N\Pi I_{t-1}$	$NPDI_{t-1}$	$LAPF_t$	$CORE_t$	$COSA_t$	$COSA_{t-1}$	IR_t	$\hat{\rho}$	SSE	$\bar{R}^2$	DW
1.1	-3012.12* (-2.15)	0.04 (0.69)		0.14 (1.41)					0.76* (2.26)	0.78* (9.77)		0.39* (4.99)		0.08 (0.43)	$635x10^{10}$	0.9943	1.8831
1.2	-2971.37* (-2.48)	0.04 (0.73)		0.14 (1.56)							0.78* (10.45)	0.39* (5.12)		0.08 (0.42)	$653x10^{10}$	0.9945	1.8830
1.3	-2969.39* (-2.30)	0.04 (0.86)		0.06 (0.64)					0.79* (2.55)	0.85* (10.69)		0.29* (3.38)	172.50* (2.30)	0.27 (1.38)	$531x10^{10}$	0.9952	1.5422
1.4	-2852.45* (-2.59)	0.04 (0.87)		0.06 (0.83)							0.84* (11.39)	0.28* (3.45)	171.78* (2.34)	0.26 (1.34)	$531x10^{10}$	0.9953	1.5428
1.5	-3126.93* (-2.76)	0.20* (4.05)		0.21* (2.54)		-0.15* (-3.04)	-0.24* (-3.21)				0.82* (14.22)	0.28* (4.56)	305.08* (5.10)	0.55* (3.24)	$284x10^{10}$	0.9877	1.7243
1.6	-5265.22* (-4.40)		0.23* (3.69)	0.36* (3.47)				-0.13* (-2.27)		0.83* (9.84)		0.33* (4.19)		0.43* (2.36)	$600x10^{10}$	0.9843	1.8225
1.7	-4554.60* (-4.71)		0.28* (6.57)	0.31* (4.24)				-0.18* (-4.62)		0.85* (14.24)		0.23* (4.08)	286.53* (5.01)	0.63* (3.97)	$289x10^{10}$	0.9843	1.8374
1.8	-2390.94* (-2.40)		0.19* (2.51)		0.58* (10.42)			-0.20* (-3.62)				0.57* (7.82)		-0.16 (-0.79)	$802x10^{10}$	0.9933	2.0106
1.9	-3320.22* (-2.57)		0.28* (4.82)		0.62* (13.37)			-0.24* (-4.64)				0.28* (3.73)	244.77* (3.15)	0.64* (4.33)	$572x10^{10}$	0.9690	1.7334

't' Ratios in Parentheses

* Denotes significance at the 5% level.

x Denotes significance at the 10% level.

imputing LAPF to NWI but allowing NΠI and CORE to differ. The restriction that the coefficients of lagged NΠI and NWI in 1.5 are equal, is also imposed. The restriction is accepted. In both 1.6 and 1.7 the coefficient of NΠI is higher than that of WI but not significantly so.

Equations 1.8 and 1.9 finally, test the NKSF: by imputing LAPF to net wage income and CORE to profit income. In both cases the proportion of ΠI saved is found to be much higher than that of WI saved, supporting the earlier findings of the studies referred to in Section 1. This is in line with the neo-Keynesian proposition but note that it casts doubt both on the Kaldorian proposition that retention can justify a higher proportion to save profit, and the interpretation of the coefficients as propensities.

In Table 2 we have more results on the NKSF, in the framework of the DL and LCH models, as expounded in the last two Chapters. Equations 2.1 and 2.2 result from 2.1 and 2.3 respectively in Chapter 6: by relaxing the restriction that the coefficients of $NPDI_t$ and $NPDI_{t-1}$ are equal, obtaining NWI and NΠI from NPDI along the lines described earlier in this Chapter, and then imputing LAPF and CORE to NWI and NΠI respectively to obtain WI and ΠI. 2.2 is 2.1 but also includes the interest rate. Equations 2.3 and 2.4 are obtained from 3.1 in Chapter 6: by splitting NPDI to NWI and NΠI, imputing the LAPF part of COSA to NWI and the CORE part of COSA to NΠI to obtain WI and ΠI respectively, and then following the same procedure for $NPDI_{t-1}$ and $COSA_{t-1}$. 2.5 and 2.6 are 2.3 and 2.4 respectively but involve imposing on the latter the restriction of equal coefficients to ΠI_{t-1} and WI_{t-1} to obtain PRI_{t-1}. The restriction is accepted. Finally, 2.7, 2.8

Saving out of Wage and Profit Income in the Distributed Lag Model and the Life Cycle Hypothesis

Dependent Variable : PRSA : Annual Data 1951-1981 U.K.

Eqn. No.	Constant	WI_t	WI_{t-1}	ΠI_t	ΠI_{t-1}	$NPDI_{t-1}$	PRI_{t-1}	IR_t	$INFL_t$	$PRSA_{t-1}$	$\hat{\rho}$	SSE	$\bar{R}^2$	DW
2.1	231.93 (0.26)	0.26* (4.52)		0.67* (16.84)		-0.35* (-7.63)				0.50* (10.80)	-0.02 (-0.11)	$488x10^{10}$	0.9959	2.0339
2.2	2345.73 (0.46)	0.28* (4.88)		0.67* (17.42)		-0.37* (-7.99)		109.51 (1.62)		0.46* (9.26)	0.28 (1.47)	$439x10^{10}$	0.9962	1.7104
2.3	1827.44* (2.01)	0.32* (5.09)	-0.46* (-7.59)	0.74* (17.41)	-0.39* (-4.63)					0.79* (9.40)	0.12 (0.59)	$454x10^{10}$	0.9960	1.7717
2.4	2063.28* (2.29)	0.34* (5.40)	-0.48* (-7.86)	0.74* (17.90)	-0.40* (-4.89)			98.90 (1.48)		0.77* (9.26)	0.30 (1.56)	$414x10^{10}$	0.9962	1.5195
2.5	1759.81x (1.96)	0.31* (5.05)		0.75* (18.19)			-0.44* (-7.86)			0.83* (11.68)	0.08 (0.43)	$467x10^{10}$	0.9961	1.8266
2.6	1975.24* (2.21)	0.33* (5.32)		0.75* (18.60)			-0.46* (-8.10)	93.94 (1.41)		0.82* (11.57)	0.24 (1.21)	$431x10^{10}$	0.9962	1.6107
2.7	-202.20 (-0.22)	0.29* (5.16)		0.66* (17.22)		-0.39* (-8.35)		131.70x (1.96)	-597.13 (-1.52)	0.51* (8.54)	-0.18 (-0.85)	$399x10^{10}$	0.9964	2.0372
2.8	1232.45 (1.39)	0.36* (6.30)	-0.51* (-9.01)	0.74* (19.56)	-0.48* (-5.92)			134.25* (2.16)	-935.27* (-2.44)	0.92* (9.58)	-0.09 (-0.41)	$326x10^{10}$	0.9969	2.0800
2.9	1157.86 (1.35)	0.36* (6.40)		0.74* (20.41)			-0.50* (-9.46)	133.72* (2.19)	-977.03* (-2.67)	0.94* (12.02)	-0.15 (-0.74)	$329x10^{10}$	0.9970	2.1196

't' Ratios in Parentheses

* Denotes significance at the 5% level.

x Denotes significance at the 10% level.

and 2.9 are 2.2, 2.4 and 2.6 respectively, but include an inflation variable, both to check the robustness of the results in its presence and because of recent concern on the effects of inflation on savings, (see e.g. Deaton, 1977, Davidson, et. al. 1978). In all cases this is negative and in two out of three, significantly so.[6/]

Regarding our main concern, the findings in Table 2 support all previous conclusions. In all equations the coefficient of the ΠI variable are significantly higher than the coefficient of the WI variable. On average around one third of wage income is shown to be saved and approximately 70% of profit income. This is in line with Kalecki's original results, (see Chapter 4), and the other studies outlined in the introduction of this Chapter.

3. DISCUSSION AND CONCLUSIONS

Regarding the IR and the usual econometric problems all previous considerations apply in this Chapter too. A potential econometric problem arises from the fact that in an ex-post sense the equations reported in this Chapter result from imposing invalid restrictions to the equations of Chapter 6. This is true both when, following Kaldor, we impute retentions to profit income and also when following our suggestions we impute pension funds to wage income. As it turned out this did not appear to create any statistical problems with the results, but it obviously bears heavily on the economic interpretation of the coefficients, which we stress once more, far from being propensities, are an amalgam of true propensities and/or disequilibrium savings, along with corporate savings.

As in the previous Chapters we also estimated our equations in their first difference form. Similar results were found. When, for example, we estimated 2.2, we obtained:

$$\Delta(PRSA_t) = \underset{(-1.05)}{-\ 161.44} + \underset{(5.87)}{0.37^*}\ \Delta(WI_t) + \underset{(15.97)}{0.68^*}\ \Delta(\Pi I_t) - \underset{(-2.94)}{0.24^*}\ \Delta(NPDI_{t-1})$$
$$+ \underset{(2.29)}{177.35^*}\ \Delta(IR_t) + \underset{(3.66)}{0.28^*}\ \Delta(PRSA_{t-1}) - \underset{(-0.52)}{0.11}\ u_{t-1} + \varepsilon_t \qquad (2.2')$$

$$\bar{R}^2 = 0.9279 \qquad SSE = 517\times10^{10} \qquad DW = 2.1037.$$

We also obtained similar results when we tested in more complicated models the idea that proportions of income saved may differ even only if personal sector shares are considered. In all cases the proportion of profit income saved was higher than that of wage income, but in no case significantly so, supporting similar findings by other studies in recent years, but exposing their limitations too.

Our suggestion that compulsory pension funds schemes cast doubt on the theoretical validity of the Kaldorian idea that corporate retention policies per se are sufficient to justify a higher 'propensity' to save profit income than wage income, combined with our ex-post empirical observation that the 'Kaldorian' idea on differential 'propensities' is after all true, reposes the question. Why profit income is saved in a higher proportion that wage income ?

It appears to us that an answer to this question can be obtained by going back to the wealth and other 'peculiarities' of property income owners, or at least the most wealthy of them. That is, the idea that a higher proportion of their income is saved by them, or on their behalf by

the corporate 'controlling group', simply because a higher proportion of income is there, available to be saved: which takes us back to Pasinetti's world.

SUMMARY

We tested the neo-Keynesian Saving Function and related hypotheses by use of post-war U.K. data. Support was given to the idea that profit income is saved in a higher proportion than wage income but doubt was cast both to the interpretation of the coefficients as 'propensities' and the Kaldorian idea that corporate retention per se can justify this finding.

NOTES

1/ Burmeister and Taubman's (1969) work too, provides indirect but clear cut evidence for the 'Kaldorian' hypothesis. Some problems arising, in particular with the treatment of pension funds are analyzed in the next Section.

2/ This approach is also followed in the Bank of England consumption equation (see e.g. Davis, 1982) and some macroeconometric models such as the Liverpool model. This indirect acceptance of Kaleckian essentially ideas highlights the indispensability of using the Kaleckian tools of analysis, in particular for policy oriented issues, even by their critics. See also Sawyer, (1982).

3/ See e.g. the Blue Book (various issues) for details. Evidently this treatment fails to consider wider normative issues such as the argument that while the employers should solely be responsible for the payment of wages, the 'social wage' is rather financed by taxes levied on the whole population: i.e. workers too. It could also be argued that the 'social wage' is a subsidy to employers: as, by ensuring the existence of a physically capable working force, it tends to reduce lost hours of work due, e.g. to illness, and thus it tends to increase productivity and profits. Such problems highlight the inadequacy of using the existing data to test theoretical concepts such as the ones considered in this thesis. See also Aaronovitch and Smith (1981).

4/ To facilitate the reading of the econometric results from the tables, we adopt a slight change in the notation.

5/ See also our treatment in Chapter 3.

6/ This result, however, was not robust. From the equations estimated with an inflation variable only a small proportion resulted in a significant coefficient. More often than not the coefficient was negative but insignificant. Our findings contrast the currently widely accepted idea that inflation increases saving (see also Hendry and von Ungern Sternberg, 1980), but it is not against economic theorising and/or other empirical evidence on the issue. See e.g. Branson and Klevorick, (1969), for a result similar to the one reported here, and Steindl (1983), for a different theoretical view. Cuthberston (1983) have shown that the impact of inflation on saving, depends heavily on the definition of saving adopted.

CHAPTER 8

An Estimated Saving Function for the Household Sector : Synthesis*

* An earlier version of this Chapter was presented at an Economic Theory Workshop at Warwick.

INTRODUCTION

A central point arising, we think, from the analysis and empirical evidence of the preceding Chapters, is that non-controlling households pay little - if any - attention to their ownership claims on income that they do not actually control, and 'prefer' to pursue their consumption-saving plans based on what they have at their disposal: their net personal disposable income.

From the above this very important implication follows: doubt is cast on the neoclassical reliance on the presumably homogeneous aggregate, i.e. private income, for the specification of household saving function. A better alternative would appear to be to use net personal disposable income for this purpose and then appropriately augment the resulting specification to account for potential substitutability between contractual saving on the one hand, and net personal saving, on the other. This alternative is followed in this Chapter.[1/]

In Chapter 5 we rederived the Swamy (1968) result regarding the equivalence of the Life Cycle Hypothesis and the Houthakker-Taylor model, in a different way to Swamy's. We have also shown that a Distributed Lag model of saving may lead to the same specification.

In the first Section of this Chapter, we extend this result to include versions of: the partial adjustment hypothesis of consumption, the simple lag-habit persistence, and the adaptive expectations-permanent income hypotheses of consumption. More simple alternative ways of obtaining the same estimated form are also entertained. In Section 2 we proceed to repeat in the framework of this 'generalized' saving function

for the household sector, all the econometric exercises involved in the second part of this thesis. In Section 3 we have discussion and conclusions.

1. A 'GENERALIZED' SAVING FUNCTION FOR THE HOUSEHOLD SECTOR

We have seen that the equation:

$$S_t = \alpha_1 \Delta Y_t + \alpha_2 S_{t-1} , \qquad (1)$$

where S stands for saving and Y for income, is consistent with the LCH and the H-T models of consumption-saving: their difference being that the LCH is specified in terms of private saving (PRSA) and private income (PRI), while the H-T model is specified in terms of personal sector saving (PSS) and personal sector disposable income (PSDI).[2/]

Equation (1) is also consistent with a partial adjustment model of consumption, which equates the desired or equilibrium value of consumption to income - implying a marginal propensity to save equal to zero. To see that assume:

$$C^*_t = Y_t . \qquad (2)$$

Then from $$\Delta C_t = \delta (Y_t - C_{t-1}) , \qquad (3)$$

obtain $$C_t = (1-\delta) C_{t-1} + \delta Y_t . \qquad (4)$$

Then substitute C_t by its definition $Y_t - S_t$, and obtain the estimated form (1).

Further, equation (1) is consistent with: the simple lag-habit persistence, and the adaptive expectations - permanent income hypotheses of consumption.[3/] All the above models give rise to an estimated equation of the form:

$$C_t = \beta_1 Y_t + \beta_2 C_{t-1} \quad . \tag{5}$$

[3/] See e.g. Ferber (1973). Substituting in (5) for S_t, obtain

$$S_t = (1-\beta_1) Y_t - \beta_2 Y_{t-1} + \beta_2 S_{t-1} \quad , \tag{6}$$

which is an unrestricted version of (1).

Evidently (1) can also be derived directly; from a geometrically declining distributed lag - Koyck transformation model of S_t on ΔY_t : as well as from the identity $S_t = S_{t-1} + \Delta S_t$, if the simple behavioural assumption $\Delta S_t = s\ (\Delta Y_t)$ is adopted.

From the above it follows that, in its estimated form (1) appears to be consistent with most consumption-saving models proposed to date. In this sense it provides a generally accepted econometric framework in which any hypotheses of our interest can be tested. It also highlights the validity of the oft advanced criticism against the LCH and the Permanent Income Hypothesis (PIH), that they are operationally indistinguishable from more 'simplistic' hypotheses. See e.g. Marglin (1975) and Green (1979).

Equation (1) does not provide, however, a ccmmon ground as regards the appropriate definition of savings-income to be adopted: which, as we will see, also bears on the issue of the appropriate way of testing

the substitutability of saving. This apparently simplistic difference however, should not be underestimated. Indeed, it is not far-fetched to argue that the choice of the data per se, reflects ideology. Thus, the choice of private income as the appropriate variable for consumption-saving decisions is the result of, and reflects, an ideology of consumers sovereignty, perfectly competitive firms and perfect capital markets. In contrast the choice of net personal disposable income appears closer to implying a world of the corporate controlling group's sovereignty and imperfect capital markets. From our analysis in Chapter 2, and the empirical findings in Chapters 5 and 6, it would appear that the choice of net personal saving and disposable income for the specification of the saving function, is closer to reality than its alternatives.

2. EMPIRICAL RESULTS

In Table 1 and 2 we summarize the results obtained from estimating (versions of) equation (1). Starting from Table 1, equation 1.1 tests the unrestricted version of (1) that results from splitting $\Delta(NPDI_t)$ to $NPDI_t$ and $NPDI_{t-1}$. A constant term is also included in 1.1 and all other equations to mean correct the series. (1) is estimated in 1.2. The restriction is accepted at the 5% level of an F test, implying a MPS net personal disposable income equal to zero: i.e. only dis-equilibrium saving on the part of the household sector as a whole.

Equations 1.3 to 1.8 account for potential substitutability, by extending 1.2 appropriately. This can be done in two equivalent ways. That is, CCRE and/or LAPF can be included either only in the right hand side of 1.2 as additional explanatory variables, or they can be both included to the right hand side and added to the dependent variable. The

TABLE 1

A 'General' Saving Function for the Household Sector and the Substitution Hypothesis of Saving : Annual Data 1951-1981: U.K.

Eqn. No.	Dependent Variable	Constant	$NPDI_t$	$NPDI_{t-1}$	$\Delta(NPDI_t)$	$LAPF_t$	$CORE_t$	$COSA_t$	NPS_{t-1}	$\hat{\rho}$	SSE	$\bar{R}^2$	DW
1.1	NPS	- 1706.54 (-1.48)	0.33* (3.73)	- 0.29* (-2.68)					0.74* (3.45)	0.13 (0.65)	$941x10^{10}$	0.9000	1.7114
1.2	NPS	- 343.98 (-1.61)			0.39* (5.64)				0.99* (16.04)	0.01 (0.04)	$993x10^{10}$	0.8984	1.8367
1.3	NPS	- 623.97[x] (-1.72)			0.39* (3.18)	-0.24 (-0.68)	0.11 (1.38)		1.01* (4.20)	-0.08 (-0.37	$918x10^{10}$	0.8985	2.0084
1.4	PSS	- 438.43 (-1.28)			0.36* (2.90)	1.10* (4.07)			0.91* (3.90)	-0.02 (-0.09)	$988x10^{10}$	0.9676	1.8228
1.5	NPR	- 690.76[x] (-2.00)			0.33* (3.99)		1.07* (18.46)		0.87* (7.47)	-0.02 (-0.09	$935x10^{10}$	0.9875	1.9250
1.6	PRSA	- 623.97[x] (-1.72)			0.39* (5.64)	0.76* (2.09)	1.11* (13.83)		1.01* (4.20)	-0.08 (-0.37)	$918x10^{10}$	0.9923	2.0084
1.7	PRSA	- 674.13[x] (-1.90)			0.32* (3.55)			1.06* (21.05)	0.84* (5.98)	-0.01 (-0.03)	$944x10^{10}$	0.9924	1.8990
1.8	PRSA	- 1409.54 (-1.07)	0.02 (0.58)		0.29* (2.60)			1.03* (15.42)	0.75* (3.42)	0.09 (0.41)	$932x10^{10}$	0.9922	1.7956

't' Ratios in Parentheses.

* Denotes significance at the 5% level.
x Denotes significance at the 10% level.
Δ Denotes the first difference of the relevant variable.

difference will be in the interpretation of the coefficients; in the former case a coefficient of zero will imply independence while in the latter case a coefficient of one will imply this hypothesis.[4/]

In 1.3 both LAPF and CORE are included as explanatory variables in the right hand side of 1.2. The add-on hypothesis is supported. In 1.4 LAPF is added in both sides of 1.2. The add-on is again supported. In 1.3 CORE is added in both sides of 1.2. The same hypothesis is supported as before. 1.6 is 1.3 but also includes LAPF and CORE in the left hand side. It can be seen that the results of 1.3 are exactly reproduced. In 1.7 the coefficients of LAPF and CORE are restricted to be equal. The restriction is accepted at the 5% level of an F test. 1.8 is 1.7 but includes the $NPDI_t$ as an additional explanatory variable. Again, it is insignificant suggesting a zero 'true' MPS.

Evidently the common framework provided by equation (2) can also be used in order to test the impact of other potential explanatory variables on saving, as well as some of our concerns of Chapters 6 and 7.

Equation 2.1 (Table 2), tests for the true propensities to save net wag and net profit income: by splitting NPDI in 1.8 to these two variables. Zero propensities are found. 2.2 allows for disequilibrium saving by 'relaxing' all relevant restrictions in 1.7 along the lines described in Chapter 7. The results are similar to the ones of Chapter 7. Going back from 2.2 to its restricted version 1.7, we see by performing an F test that all restrictions implied in the latter are accepted: implying that an equal part of both $\Delta(N\Pi I)$ and $\Delta(NWI)$ is saved.

From the final four equations in Table 2, 2.3 tests the idea that

A 'General' Saving Function for the Household Sector and 'Propensities' to Save Wage and Profit Income :
Dependent Variable : PRSA; Annual Data 1951-1981 : U.K.

Eqn. No.	Constant	NWI_t	WI_t	$N\Pi I_t$	ΠI_t	NWI_{t-1}	$N\Pi I_{t-1}$	$\Delta(NPDI_t)$	$NPDI_{t-1}$	$CORE_t$	$COSA_t$	IR_t	$INFL_t$	PPS_{t-1}	$\hat{\rho}$	SSE	$\bar{R}^2$	DW
2.1	-1089.57 (-0.56)	0.01 (0.14)		0.05 (0.42)				0.29* (2.60)			1.03* (14.84)			0.76* (3.31)	0.07 (0.37)	$930x10^{10}$	0.9919	1.8100
2.2	775.64 (0.38)	0.35* (3.45)		0.34* (2.41)		-0.42* (-3.39)	-0.15 (-1.20)				1.02* (15.65)			0.82* (3.77)	0.00 (0.01)	$787x10^{10}$	0.9928	1.8958
2.3	-1349.80 (-0.73)		0.40* (4.89)	0.51* (3.69)					-0.39* (-3.98)	1.10* (14.79)				0.98* (4.65)	-0.03 (-0.13)	$861x10^{10}$	0.9925	1.9156
2.4	-4938.29* (-2.00)		0.37* (4.45)		0.70* (9.64)				-0.25* (-2.17)					0.35 (1.24)	0.70* (5.08)	$112x10^{11}$	0.9267	1.5262
2.5	- 410.61 (-0.24)	0.34* (4.08)		0.23^{x} (1.92)		-0.37* (-3.56)	-0.19^{x} (-1.82)				1.01* (18.92)	267.70* (3.52)		0.54* (2.76)	-0.10 (-0.45)	$503x10^{10}$	0.9952	1.9247
2.6	674.21 (0.58)	0.46* (6.21)		0.28* (2.88)		-0.56* (-6.35)	-0.27* (-3.04)				1.07* (28.09)	288.97* (5.21)	-979.23* (-5.75)	1.04* (2.92)	-0.55* (-2.92)	$391x10^{10}$	0.9984	2.0353

't' Ratios in Parentheses

* Denotes significance at the 5% level.
^{x} Denotes significance at the 10% level.
Δ Denotes the first difference of the relevant variable.

'propensities' out of personal sector income shares only may still differ. As in Chapter 7, the coefficient of the NPI variable is higher than that of the WI variable, but not significantly so. Equation 2.4 tests for aggregate income shares 'propensities' by imposing on 2.3 the relevant restrictions. Similar results as in Chapter 7 are obtained. The coefficient of the lagged NPS variable, however, is insignificantly different from zero, a result perhaps of the imposition of invalid restrictions in 2.3. An F test rejected the restrictions at the 5% level.

The last two equations, 2.5 and 2.6 are as 2.2 but also include the interest rate, and both the interest rate and an inflation variable, respectively. The results are in line with those of Chapter 7. Regarding the substitutability of saving, in all equations the co-efficient of the COSA variable supports the add-on hypothesis.

3. DISCUSSION AND CONCLUSIONS

Few new issues are raised from the results of this Chapter. The first regards the observation that in all equations the add-on hypothesis was supported. This diverges slightly from our finding, in the previous Chapters. It does not fully support our theoretical analysis in the first part of this thesis either. An interpretation of the findings of the previous Chapters in the light of this Chapter's results could be that the small degree of imperfect substitution found in the previous Chapters was simply reflecting substitution between LAPF and CORE, rather than between LAPF and CORE[5/] on the one hand, and NPS on the other. The substitution between contractual and net personal saving

that is, is zero, or households take no account whatever of their ownership claims on corporate saving. This would be in line with Marglin's suggestions.

A second issue concerns the relation between the saving function estimated in this Chapter, and the ones estimated in Chapters 5 to 7. The basic difference evidently arises from the fact that the latter include a lagged PRSA variable, while the estimated function in this Chapter includes the lagged NPS variable instead. Despite this apparent difference it is fairly straightforward to go from the latter form to the former. Thus, observing that COSA may be affected by its past period value, including the latter as an additional explanatory variable in e.g. 1.7 and restricting its coefficient to be equal to that of NPS_{t-1}, we can obtain an equation similar to the ones estimated in Chapter 7.[6/] In this light the aggregate functions of Chapter 7 may be seen as early attempts to account for the determinants of corporate savings: but incomplete attempts, as many other variables than their past value only may be affecting COSA.

The last observation has this important connotation. If we write:

$$COSA_t = c\ (\cdot)\ \text{[7/]}\ , \qquad (7)$$

where c represents a functional form and $(\cdot)$ the set of explanatory variables that affect $COSA_t$, then under the plausible assumption that PRSA do not enter the set $(\cdot)$, (1) and (7) form a recursive model that can be estimated with OLS and without the problem of Simultaneous Equation Bias. This, along with the lack of any other serious

econometric problems and the generality of the estimated form of (1), might suggest that our results are of some value.

SUMMARY

We derived a 'general' saving function for the household sector and specified it in terms of what we considered to be the most appropriate definition of the variables. We then extended it to account for potential substitutability of saving and tested in its framework the hypotheses advanced-tested in the previous Chapters of this thesis. Largely similar results were found as before.

NOTES

1/ Previous attempts along these lines include Marglin (1975) and Pearce and Thomas (1981). No account has been given, however, to contractual saving. Howrey and Hymans' (1978) work appears to be closer to our approach. Their reliance on an augmented version of the H-T model, though, turns out to imply a long run elasticity of the retentions coefficient equal to zero, a fact that submits too much to the LCH view, to which their adoption of the definition of net personal saving, essentially contrasts.

2/ They also differ in the error term. See Chapter 5.

3/ For differences between these models see e.g. Wallis (1979). It should be noted that the equivalence between consumption-saving functions to which we refer regards only the mathematical form of the deterministic part of the models. In case explicit modelling of the error term is undertaken this equivalence may no longer hold true and thus apparently equivalent specifications may lead to different results.

4/ An important advantage, however, of using this approach is that it accounts for Feldstein's (1978a) critique to Howrey and Hymans (1978), that aggregate variables are better for the specification of the saving function.

5/ See also Chapter 2 for a rationale for this possibility.

6/ Our preliminary empirical findings along these lines supported such an interpretation. However, we believe that much more evidence would be needed to fully justify this proposition.

7/ Work on the determination of corporate retentions in particular goes back to Lintner (1956). See also Dobrovolsky (1951). More recently, Hart (1968) has surveys and new evidence. We know of no work on the determinants of pension funds. As the issue is also controversial and not the subject matter of this thesis we chose to leave the determinants of COSA in (7) unspecified rather than engage ourselves with plausible, at best, speculation. A move in this direction, though, would represent a 'natural' extension of this thesis.

DATA APPENDIX TO PART II

The basic series adopted for the purposes of the second part of this thesis were: PSDI, C, CORE, LAPF, IR, RIR and INFL. The first three were taken from the U.K. National Income Accounts: i.e. Economic Trends, 1982 Annual Supplement, (ETAS) and the National Income and Expenditure (Blue Book). LAPF was provided to the author by M. Sherring of the Central Statistical Office. They are all defined after tax and before providing for depreciation, stock appreciation and additions to tax reserves. The IR series basically used was the treasury bill rate, obtained from the International Monetary Fund (IMF) Financial Statistics, 1983. Whenever different series were used, these were referred to in the text. The real interest rate (RIR) series was constructed by dividing the nominal interest rate (IR) by the retail price index (RPI). The inflation variable is defined as the rate of growth of RPI : i.e. $RPI_t - RPI_{t-1}/RPI_{t-1}$, itself obtained from the ETAS 1982. The PSS, NPS, PRSA, NPDI, COSA, WI, NWI, ΠI, $N\Pi I$ and $N\overline{\Pi} I$ series were constructed as described in the text. All (but the IR-RIR) series were measured in constant prices, by use of the Implied Consumers Expenditure Deflator (ICED), obtained from the ETAS, 1982. Thirty-one annual observations were used covering the postwar U.K. period (1951-1981). Problems with postwar readjustments and the rationing of durables determined the starting period and data availability the end period. An exception was made in the Appendix to Chapter 6, where the 1950-1981 period was covered, in order to ensure thirty effective observations.

POSTSCRIPT

The central theme of this thesis runs as follows. The emergence and growth of the joint stock company has led, through the socialization of the 'ownership' of the means of production to a higher level of aggregate saving being available for investment purposes, than could have been the case in its absence. This outcome has been achieved because of the unwillingness and/or inability of non-controlling households to substitute for increases in contractual (corporate) savings: i.e. corporate retentions and pension funds, by sufficiently reducing their discretionary savings. Competition among capitals as to who has control over a larger part of surplus value establishes a preference for a high retention ratio and/or the net inflow into pension funds ratio, on the part of the 'controlling group'. The realization of the difficulty or futility of attempting to achieve substitution and/or the induced preference for consumption achieved through the advertising and other selling efforts of the corporate sector, establishes the preference for a low retention and/or net inflow into pension funds ratio, on the part of the non-controlling groups. Tax and other advantages, and/or sheer compulsion ensure the buying of shares and/or the participation in corporate pension funds schemes, of the non-controlling households. Historical consistency, the existing evidence and/or the dynamics of the system suggest that it is a more plausible hypothesis to interpret the above as the result of capitalist control of today's corporations, rather than managerial and/or all shareholders' control. The achievement of a higher level of financial capital available for investment, does not necessarily have a beneficial impact on the domestic economy as a whole: as, by tending to reduce the part of private income devoted to consumption, it contains the seeds of a realization failure. The inter-

nationalization of production and the distinct possibility that some 'national' capitals transform themselves into 'rentiers', based on their share in surplus value to production abroad, may tend to strengthen the realization failures of the previously industrialized world: by giving to the rentier capitalists a further incentive to continue and expand the process of the socialization of the 'ownership' of the means of production at their domestic bases. An important implication of the socialization of the 'ownership' of the means of production and the finance policies of the 'controlling group', arises from their impact on the celebrated theme of the form of the saving function: an extended Managerialist Saving Function, or alternatively, the Monopoly Capitalism Saving Function appears to be close to describing saving 'propensities' to date. Most of the above propositions were found not to contrast with the post war U.K. evidence. Support was also found for the MCSF and the Galbraith-Marglin idea of zero propensity to save net household income. Doubt was cast on the interpretation of the proportions to save private income shares, as propensities. Most models of the saving function were found to lead to a general estimated form. This 'generalized' household saving function was specified in terms of actually disposable income and saving only, and when estimated it supported previous theorising-findings.

The above analysis - findings are subject to various limitations and can be extended in various directions. Many of the problems encountered, in particular those of a technical nature, were explicitly acknowledged in the text, and they will not be repeated here. Instead, we will focus on issues of a more general nature on which less than full treatment was given in the previous pages.

The state, is one such issue. Evidently our previous discussions

were not conducted under the assumption of 'no public sector'. In particular the role of the state was always present: in our explanation for a differential tax treatment of retained earnings, the definitions of after tax private or (net) personal income shares and/or the role of the contributions of the central government to the households. Still, no attempt was made to fully integrate the role of the state in our previous analysis.

Such an integration would require an attempt to identify the role of the state in the class struggle, as well as in the process of the accumulation of capital. Important contributions along these lines in recent years are Miliband (1973) and Poulantzas (1968): as the work of Jessop (1977) and Holloway and Piccioto (1978) however, suggests, these issues are far from being fully resolved.

A more specific aspect of the role of the state, closely related to the analysis of the previous pages, regards the role of the public debt, and in particular of compulsory contributions to Social Security, for aggregate capital accumulation. This issue, which goes back to Ricardo, was recently revived in the work of the proponents of the 'Rational Expectations Revolution', and particularly so, in the work of Barro (1974). In essence what Barro suggested was that increased e.g. benefits on the part of the state, will not increase consumption: as rational agents will realize that they need to save sufficiently so as to finance the associated stream of the social security taxes that they anticipate. Surely this argument is little more than the replica for the public sector of the Ando and Modigliani (1963) ideas for the private sector. Not surprisingly therefore, the same protagonists are starring in these debates as in the ones examined in the previous pages.

James Tobin's (1980) criticisms of the 'neo-Ricardians' are worth our close attention: as they represent an attempt to see our world as it is, even if for the purpose only of explaining it, and constitute an attack by the establishment to the extremists of this same establishment.

Another aspect of the state relates to our analysis of realization failures. Important issues here are evidently, the role of government expenditures in raising effective demand (see e.g. Baran and Sweezy, 1967, and the discussion in Bleaney, 1976), and in particular the role of military expenditures on this regard: an issue going back to Luxembourg (1951). See also Kalecki, (1971), and Rowthorn, (1980). Our less than sufficient treatment of such issues evidently limits the scope of (parts of) our analysis, and represents an obvious area towards which future work should be directed.

Similarly, more emphasis should be paid to the international role of capital, in particular given that increasing internalization may tend to shift the required unit of investigation from the nation state, to the mode of production. See for example, the debate in Radice (1975).

The determinants of corporate saving, is another important issue addressed, but not pursued, in this thesis and represents another area in which work is required.

Although the above limitations restrict the scope of our findings-suggestions, we do not think that they seriously undermine the analysis of the previous pages. The state as well as the existing internationalization of production, represent the institutional setting whose impact may be reflected, in an ex-post sense, in the observed data: which were not

found to contradict to our views. Further, on the purely theoretical level, the question whether the fuller account of the state and the international setting will cast doubt or strengthen our results, cannot be answered on a priori grounds. In this sense it leaves our analysis intact until otherwise proven. We hope that our future work will resolve these issues and that the present work will motivate others to approach these important questions.

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